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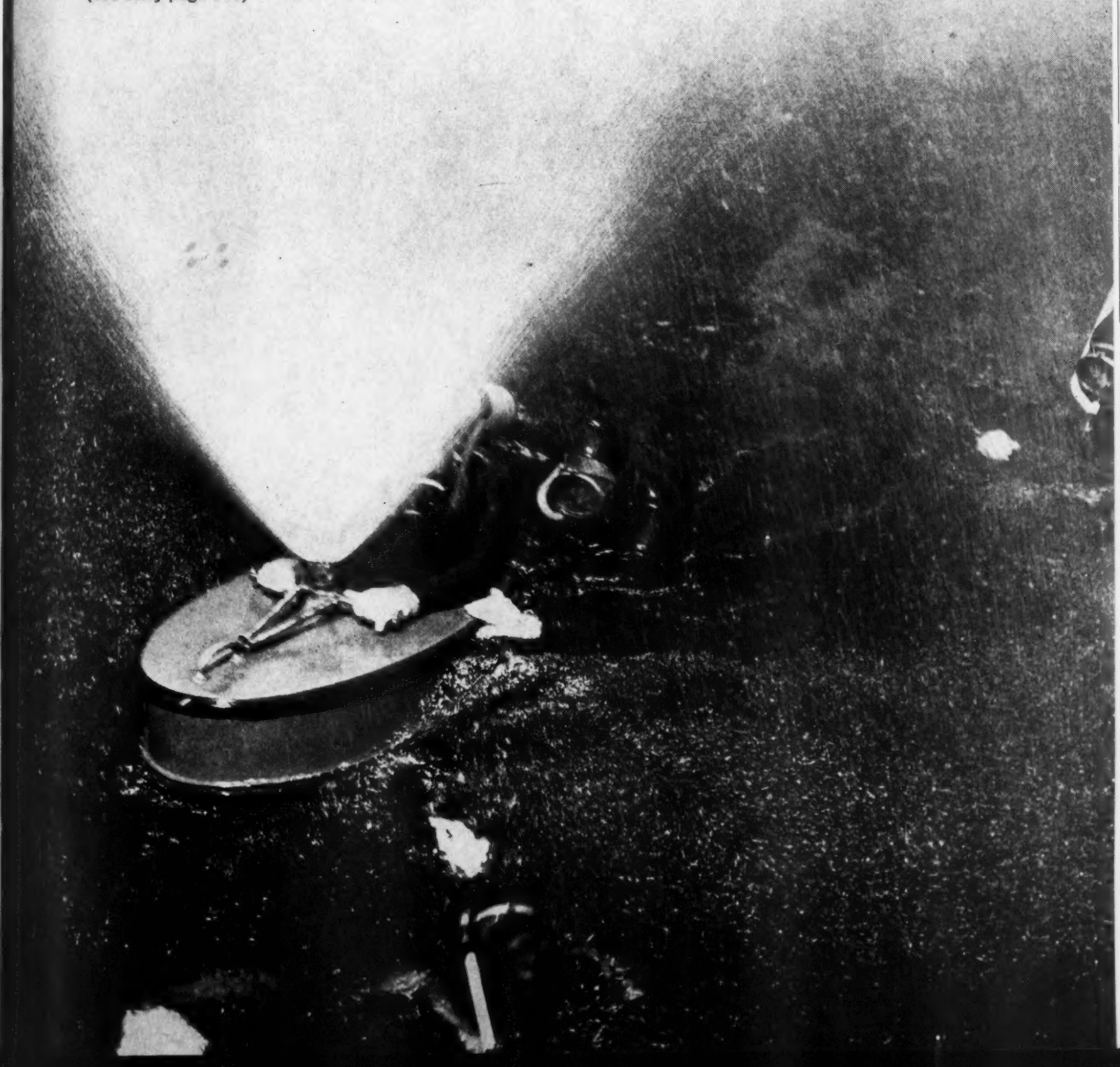
FIRE ENGINEERING

The Journal of the Fire Protection Profession Since 1877

A Reuben H · Donnelley Publication

JULY • 1961

Jet-propelled floating monitor nozzle supplied by 2½-inch line is guided by skin-diving Los Angeles City firemen during underpier fire fighting test (see story page 540)



IMPACT PROTECTION!

Heavy, flaming debris smashing over fire fighters' heads is among hazards that top the list of most frequent fire department injuries.

Knowing this, it's easy to see why our engineers have designed HARDBOILED® fire helmets to insure maximum impact protection, with minimum impact transmission. Even when exposed to temperatures as low as −60°F. or as high as +2,400°F., these tough fiber-glass shells surpass Federal and State Specifications for head protection. Yet, complete with either POWER-BLOC® or standard suspension, they weigh only 22 ounces.

We can safely say, "Bullard fire helmets are the best impact protection a fireman can use. Try it and you'll see that no fire helmet surpasses Bullard...in comfort, safety and economy."

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INDUSTRIAL SAFETY EQUIPMENT

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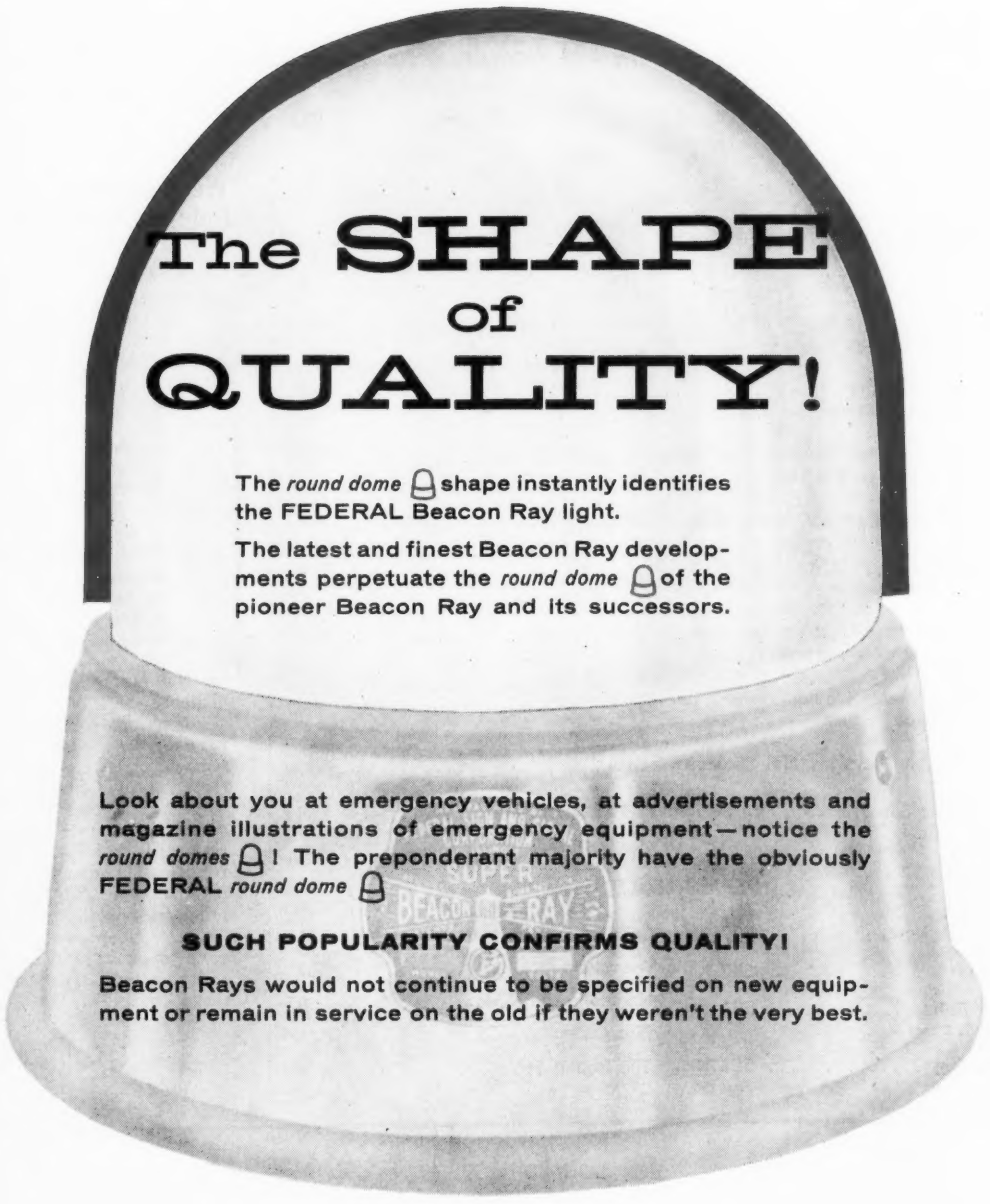
The *round dome* shape instantly identifies the FEDERAL Beacon Ray light.

The latest and finest Beacon Ray developments perpetuate the *round dome* of the pioneer Beacon Ray and its successors.



Look about you at emergency vehicles, at advertisements and magazine illustrations of emergency equipment—notice the *round domes*! The preponderant majority have the obviously FEDERAL *round dome*

SUCH POPULARITY CONFIRMS QUALITY!

Beacon Rays would not continue to be specified on new equipment or remain in service on the old if they weren't the very best.

Be sure *you* specify FEDERAL Beacon Ray lights along with FEDERAL Sirens on *your* new emergency vehicles.

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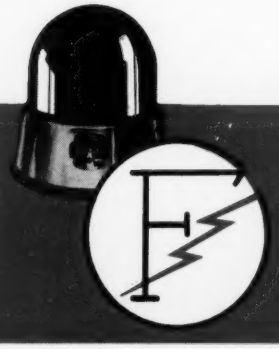

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FIRE
ENGINEERING
THE JOURNAL OF THE FIRE PROTECTION PROFESSION SINCE 1877

VOL. 114 JULY, 1961 NO. 7

IN THIS ISSUE

Arson—An Increasing Problem to the Fire Service—An Editorial 539
By Donald M. O'Brien

Underwater Fire Fighting 540
By William Barada

Psychological Aspects of Juvenile Fire Setting 543
By C. D. Bossart, D.S.C.

Instant Photography Speeds Arson Probes 544

How Firemen Can Assist in Arson Investigation 546
By John Kennedy

Compulsive Fire-Setters Must Be Reported 549
By Chief William L. Hilbish

Recovery of Flammable Liquids From a Burned Structure 550
By Joseph D. Nicol

New Apparatus Introductions and Deliveries 552

Backdraft Injures San Francisco Fire Fighters at Four-Alarm Blaze 554

DEPARTMENTS

Manufacturers' News 557
False Alarms 558
Among the Buffs 561
By Paul C. Ditzel
What's Burning 563
Coming Events 566
Association News 567
Names in the News 568
Fire Colleges 576
The Round Table 579

We Celebrate Independence Day

It may be difficult to believe, but the America that fought for its independence over 185 years ago had less population than Los Angeles County has today. The growth of this country since that memorable period has been a source of wonder to the world at large, as well as to the people who make it up.

The fire service has been a part of this growth and its expansion, while not always in exact pace with the population or industrial development, has been remarkable, if not dramatic. Reliable estimates place the number of fire departments at well over 21,000, staffed by professional and volunteer manpower in excess of 1,500,000—nearly 1 per cent of the total population.

For nearly 84 years FIRE ENGINEERING has served this important segment of our country by timely reporting of information on the latest in fire protection trends and techniques. During this entire period we have maintained an independence of thought and viewpoint tempered only by responsible judgment which freedom imposes. To us, these are important fruits of our way of life, and we salute our many friends who continue to make it possible.

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Woven Fire Hose

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The 1961 S&S Professional Cadillac Ambulance is precision engineered to incorporate every service and comfort feature available through automotive science *and* deliver the finest ease-of-handling on the road today. We challenge you to tell us where this ambulance can be improved! Since it would be impossible to detail every feature even in twice this space, we invite you to write for complete specification sheets. Then you tell us if there is a feature we have missed — or if you agree that the 1961 S&S Ambulance is the finest professional rescue equipment you have ever seen. The Hess & Eisenhardt Company, Cincinnati 42, Ohio.

Is there a feature missing

in this 1961 S&S Professional Cadillac Ambulance ?

Storage? An S&S has more compartments than ever and not one of them interferes with the largest working area in the industry. And here is the only left-hinged door for convenient curbside loading. Here, also, is a hint of the sculptured-in-steel rear design that is distinctively S&S.

Emergency? Here is big, 5-patients-and-attendant capacity, and a new standard of comfort in the floor length, even-distribution heating system, an S&S exclusive. Here is new convenience with the exclusive S&S Automatic Locking Cot Fastener that does not require moving a hand from the cot.

From the timeless beauty of sculptured styling to the smallest interior detail, an S&S ambulance is the product of 85 years of advanced engineering and dedicated craftsmanship. Only S&S gives you the stability and safety of body-and-chassis "Monotized Construction."

the tradition of leadership... S&S

Even if you drag it through rubble like this . . .

new B.F.Goodrich hose with all-Dacron jacket resists abrasion and abuse that ruins ordinary hose.

ONLY a hose that's extra tough can take treatment like this. The all-Dacron jacket makes the new B.F.Goodrich Diamond fire hose so tough it will give far longer service than any other type of hose. Yet it's just as light and easy to handle as any you've ever used. Abrasion tests show it outwears ordinary cotton-jacketed hose many times over. It can be dragged over rough pavement, even rubble, without snagging or tearing.

Mildew has no effect on B.F.Goodrich Diamond hose. Oils, greases and most chemicals can't hurt it. And it absorbs far less water, which means that it stays light and flexible, dries faster, is less likely to freeze in cold weather.

Exclusive B.F.Goodrich features built into Diamond hose help add extra years to service life. Plylock end protection (an extra layer of hard-woven cords extending 12″ from the coupling) adds 100% more strength to the coupling area. A special rubber compound used for the tube stays elastic and tough throughout the life of the hose. Coupling has Koroseal swivel gaskets that seal with hand tightening, never have to be replaced.

If you're looking for the best buy in hose, get B.F.Goodrich Diamond hose. It may cost more to begin with, but will actually cost you less in the long run. Your B.F.Goodrich distributor can tell you more about it. *B.F.Goodrich Industrial Products Company, Dept. M-131, Akron 18, Ohio.*

B.F.Goodrich

FIRE HOSE

here's the way to get a

FIRE RESCUE VEHICLE

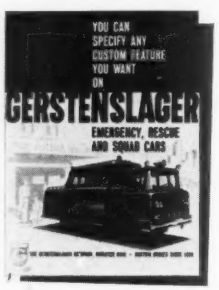
that's exactly right for your community

No standard emergency rescue vehicle is exactly right for every community. Each department must analyze its own needs, taking into consideration such factors as ambulance facilities available, special hazards, number of crew members, and whether or not the unit must also serve as a fire-fighting auxiliary.

Budgets, too, must be considered.

Gerstenslager sales engineers have helped hundreds of communities develop the most efficient unit for the needs at hand . . . and for less money. This medium-priced Rescue Unit for South Euclid is a case in point . . . extensive equipment carrying capacity, good compartmentation and first aid facilities . . . all at a reasonable cost.

We're ready to help you with your Rescue Unit planning . . . and this experienced help is available to you without obligation. Write or phone us now!



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Gerstenslager's helpful planning brochure and equipment check list shows you how. Write for your copy today.

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CUSTOM BODIES SINCE 1860

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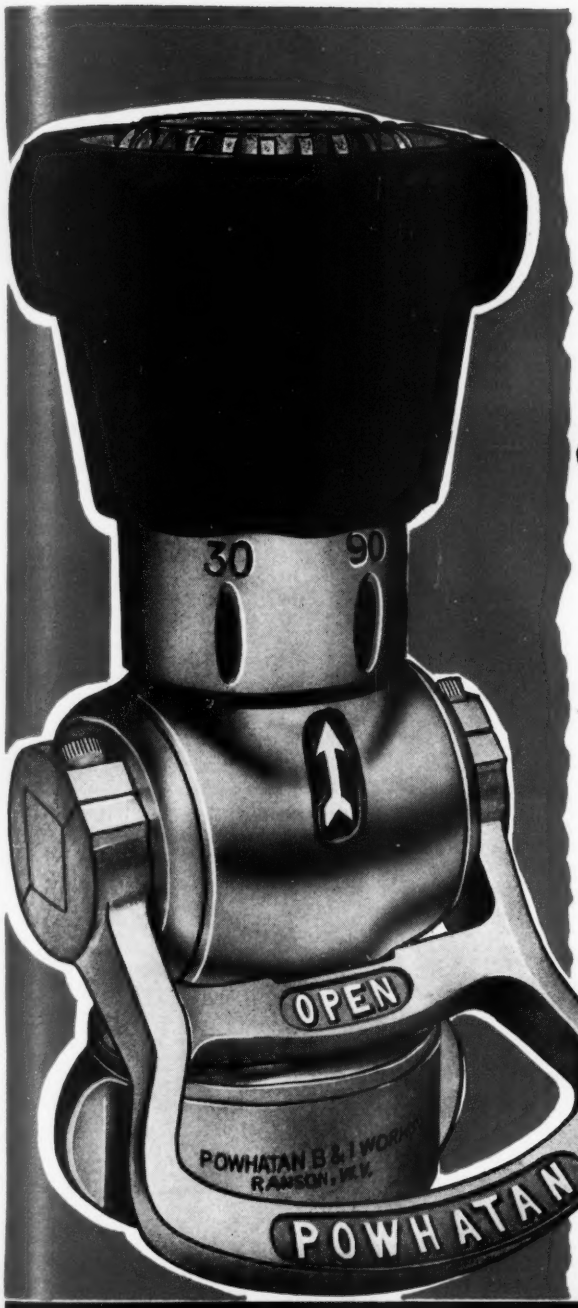

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If you haven't tried it—

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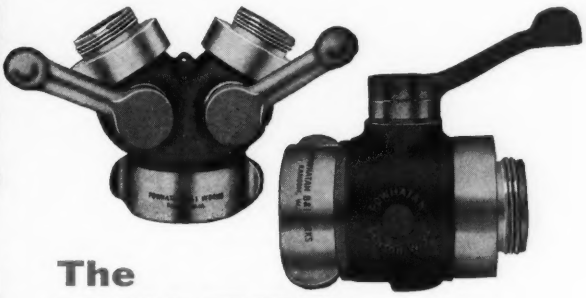
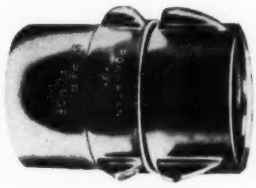
Gives finer dispersion with less water—fights fire faster. Every nozzle sold gets a 100% performance test. Greater reach with denser fog curtain, foolproof, maintenance free. Try it at our expense.



The "BALL TYPE" VALVE & SIAMESE

Quarter turn against any pressure gives you full stream or complete shut-off. A real heavy duty product for tough fire service. Size: Siamese—2½" x 1½" x 1½", Valve—1½" and 2½". Red body, polished bronze or chromium trim.

"SUPER FORGE"



Drop Forged

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POWHATAN

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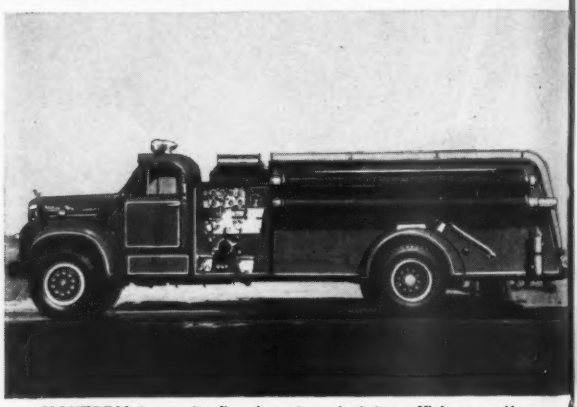
RANSON, WEST VIRGINIA

THROUGHOUT CANADA THEY AGREE...

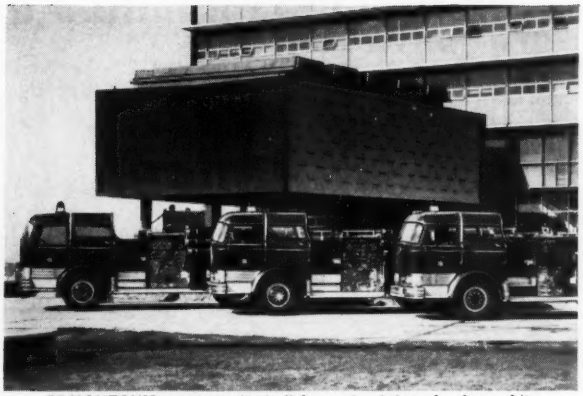
MACKS MEET ANY FIRE PROTECTION CHALLENGE!

TORONTO uses triple combination Mack pumpers like this recently delivered cab-forward model. Also about to be commissioned is a new aerial with a 100′ ladder.



MONTREAL keeps its fire department at top efficiency with a continuous modernization program. Mack 1050 Imp. gal. pumper shown is a recent addition.

DORVAL, a fast-growing Quebec community, recently added this Mack 1050 Imp. gal. pumper with 400 gal. tank and 35′ 3 section ladders.



EDMONTON'S modern city hall forms backdrop for four of its modern Mack cab-forward pumpers. These are of 1050 Imp. gal. capacity with 400 Imp. gal. booster tanks.

WINNIPEG displays its new Mack 1050 Imp. gal. triple combination pumpers and Mack aerial featuring 100′ ladder.

HAMILTON commissions Mack fire apparatus to replace its older equipment. Conventional model pumper shown recently took its place in the department.

From Quebec to the Northwest Territories . . . in cities large and small, when it comes to picking fire apparatus the answer is the same—Macks! When it comes to protecting lives and property, "second best" isn't good enough. That's why fire departments everywhere depend on Macks.

Because Mack is the only apparatus manufacturer to build all major chassis components, only Mack can custom build apparatus best fitted to your needs. Conventional or cab-forward design; with the transmissions and gear ratios exactly matched to the job you want done; with generous locker space, and with all the extras needed to cope with any fire fighting problem.

When the fire protection needs of your area demand better-built, better-designed apparatus, call on Mack. Find out why Mack apparatus is known everywhere as the best performing, most dependable equipment of its kind in the world today. Mack Fire Apparatus, Allentown, Pennsylvania. Mack Trucks of Canada, Ltd., Toronto, Ontario.

834A

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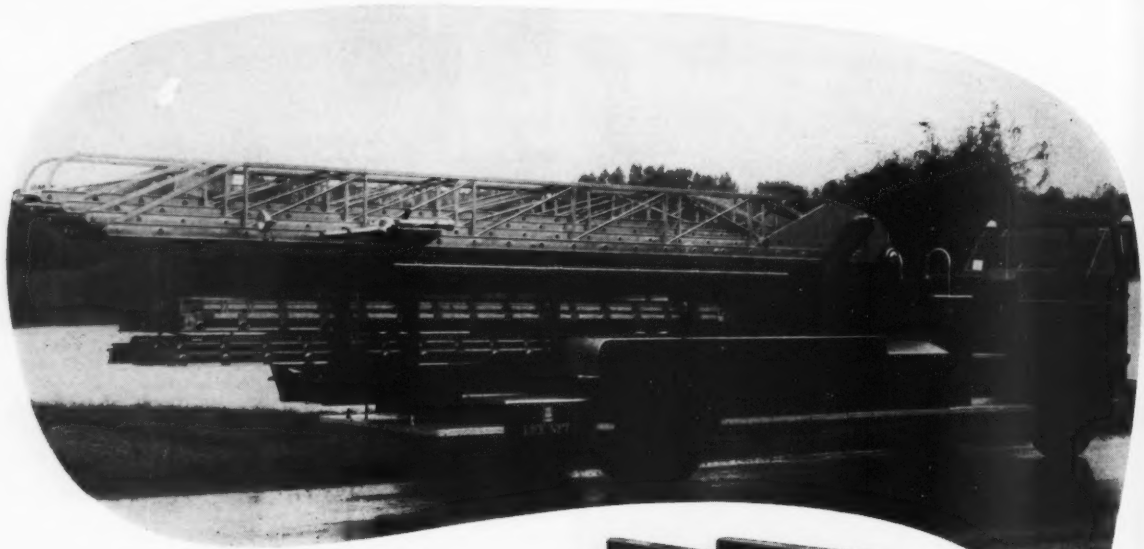
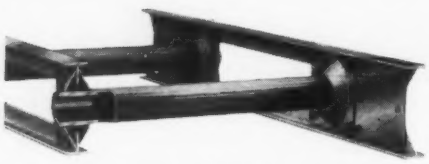
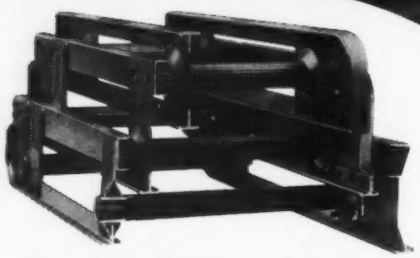
COMPLETE LINE OF PUMPERS—500 to 1250 GPM...SQUAD AND HOSE WAGONS...AERIALS 65′ to 146′...COMBINATION LADDER TRUCKS

The Alco-Lite Ground Ladders on this Aerial can help save precious minutes at fires



The above Aerial is a product of The Seagrave Corporation, Columbus, Ohio.





Exclusive Alco-Lite design also results in rungs that won't twist, turn, or break-off. Extension ladders feature channel slides that keep sections from disengaging. Sections extend, lock and unlock simultaneously. Spring-loaded locks automatically lock extended ladder sections.

Because Alco-Lite Aluminum Ladders, like the extension, straight, roof, and jack ladders on the Seagrave Aerial above are lighter in weight, you save precious minutes handling time at fires. Require less physical effort, too. Exclusive gusset-plate, expansion bushing construction makes possible the open siderail, T-channel design that eliminates extra weight-adding bulk without sacrificing an ounce of strength.

Alco-Lite Ladders more than pass all tests for strength and safety. They can't warp, rot, splinter, or burn . . . are not affected by moisture, fumes, or gases. Maintenance is no problem.

Specify Alco-Lite Aluminum Ground Ladders on your apparatus. They're easier to handle, safe, and require almost no maintenance.

Aluminum Ladder Company

FLORENCE S. CAROLINA

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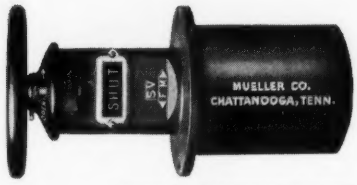
NON-ADJUSTABLE INDICATOR POST



WALL TYPE INDICATOR POST

Indicator Posts

Easily-read indicator shows whether the gate valve is open or closed. For use with 4" through 14" indicator post type valves. Adjustable, non-adjustable or wall type posts available.

Check Valves

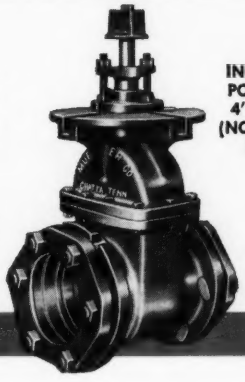
Swing type for heavy-duty vertical or horizontal installation. Iron body, fully bronze mounted. Bronze seat ring with bronze disc ring or rubber faced disc. Flanged, screwed and hub ends available.

2½" to 12"	Working Pressure:	175 p.s.i.
	Test Pressure:	350 p.s.i.
14"	Working Pressure:	150 p.s.i.
	Test Pressure:	300 p.s.i.

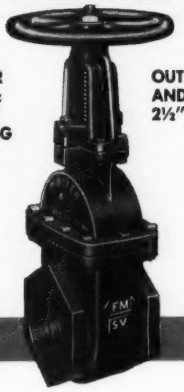
Gate Valves

Exclusive four-point wedging action on double discs provides even seating pressure for positive seating . . . eliminates disc distortion. Dependable conventional stem packing. Complete line of ends available.

4" to 12"	Working Pressure:	175 p.s.i.
	Test Pressure:	350 p.s.i.
14"	Working Pressure:	150 p.s.i.
	Test Pressure:	300 p.s.i.



INDICATOR POST TYPE: 4" TO 14" (NON-RISING STEM)



OUTSIDE SCREW AND YOKE TYPE: 2½" TO 14"

Write for more information on these quality-matched products by Mueller . . . designed specifically to meet exacting requirements of industrial fire protection systems.

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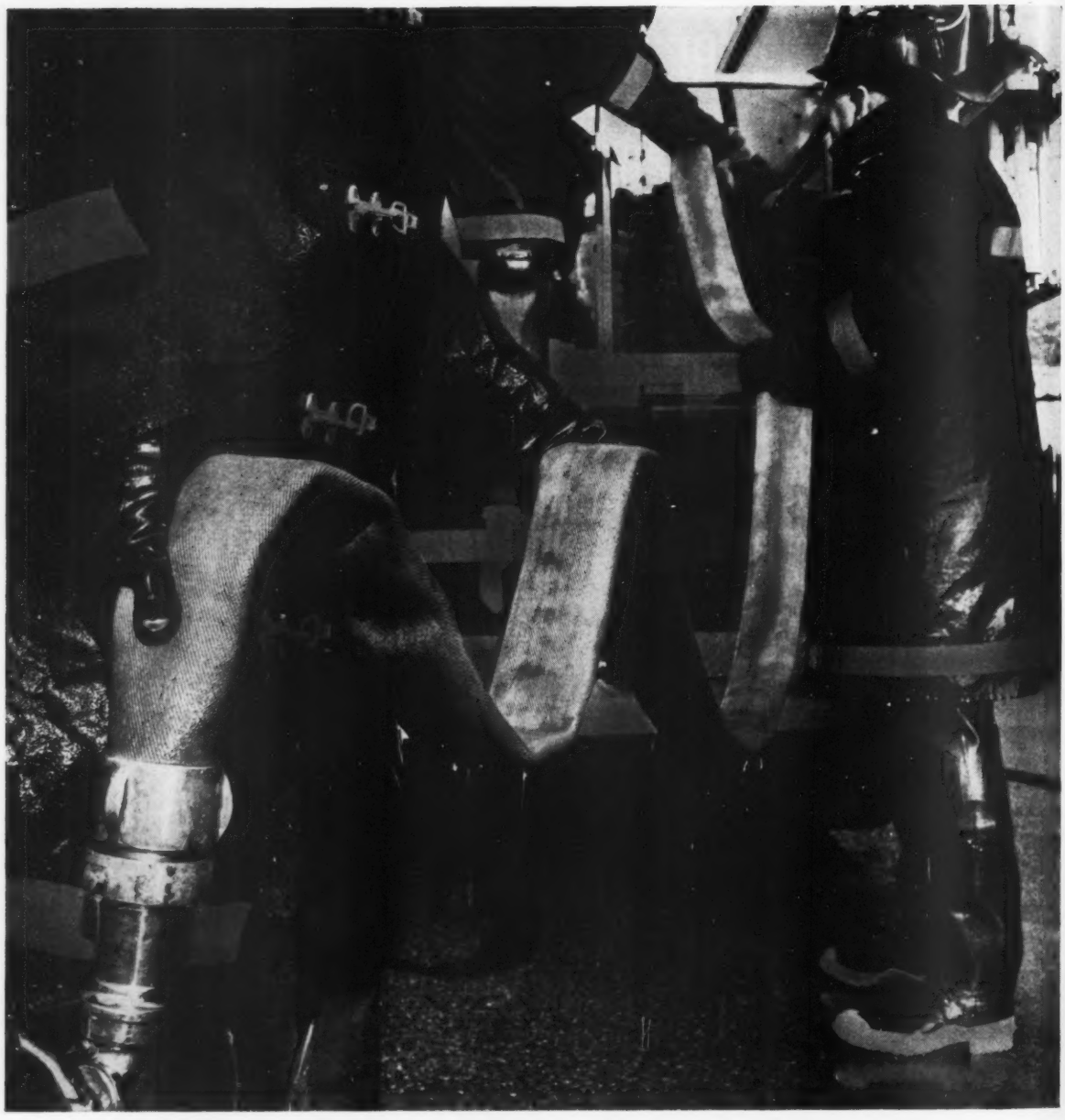

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it's jacketed 100% with DACRON®

No longer do you have to worry about drying your hose after each run . . . repack it wet without danger of attack by rot or mildew. This hose need not be out of action in the drying towers . . . it's always ready when you need it. This is hose jacketed 100% with "Dacron"* polyester fiber.

Hose jacketed 100% with "Dacron" is lightweight and easy to handle . . . feeds off the truck fast. In addition, it brings you the economy of *extra-long* service . . . resists damage when dragged over rough terrain and around sharp corners. Hose jacketed 100% with "Dacron" also withstands damage from *acids*, oils, common solvents, and many other strong chemicals.

So . . . for a hose that requires no drying, gets you back into action faster, is easier to handle, and stands up to rugged treatment . . . insist on hose jacketed 100% with "Dacron". See your supplier soon, or write to E. I. du Pont de Nemours & Co. (Inc.), Textile Fibers Dept., DM 16621, Third & Greenhill Avenues, Wilmington 98, Delaware.

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*"Dacron" is Du Pont's registered trademark for its polyester fiber.

THERE'S SAFETY IN BLOOMFIELD TOWNSHIP

Because there's safety in numbers . . . FWD Fire Apparatus Numbers! The Bloomfield Township Fire Department in Michigan protects its citizens with an F4-77, an F2-87, an S-750—and an F4-729 is on the way. Fire Chief Volly Yanuszeski depends on these FWDs to guard this residential community in Oakland County. Backing up the Chief and the FWD Fire Apparatus are 15 full-time firemen and 40 reserves. • Last year, the Bloomfield Township Fire fleet traveled more than 16,000 miles answering 396 alarms. There was $6,574,425 of property endangered with an actual loss of less than *one percent!* Truly an enviable record of achievement. Homer Case, Fire Commissioner, said: "We've never had a problem with equipment failure or inability to get to a fire with FWDs. At times we've buried the trucks up to the axle, but always got out under our own power." • Ask your FWD Fire Apparatus Dealer how you too can have more safety with FWD Numbers. FWD CORPORATION • CLINTONVILLE, WISCONSIN • SUBSIDIARIES: FWD WAGNER INC. • PORTLAND, OREGON • FWD (CANADA) LTD. KITCHENER, ONTARIO.

FWD CORPORATION

MIDWESTERN

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When working under hazardous conditions in smoke, fog, dust or darkness, firemen deserve the superior quality, design, comfort and safety features offered by the Original Midwestern Safety Coat.

Many Fire Chiefs who insist on the best of protection for the men of their department specify MIDWESTERN SAFETY garments to the last man because every outstanding Midwestern feature is original. All fabrics are extremely soft and flexible and have the qualities to stay that way at varying temperatures. You can always distinguish a MIDWESTERN SAFETY garment by the soft feeling of the material in both rubber and fabric type garments.

We have always designed and constructed our garments with the one thought . . . that every fireman deserves complete protection in his hazardous work of protecting life and property against the ravages of fire.

COMBINATION BUNKER SUITS

The many weights of both rubber coated and cloth type materials offered in our MIDWESTERN Quick-Hitch suit makes this combination ideal for all sections of the domestic market and export. Also, both coat and bunker pants may be purchased with or without detachable wool linings.

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Mackinaw, Illinois

- ☐ Have Midwestern representative call with complete information and prices.
- ☐ Send Free Catalog and fabric samples.

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MIDWESTERN SAFETY MFG. CO., Mackinaw, Ill.
Located in the heart of the Greater Peoria Manufacturing Area
Manufacturers of the Famous MACKINAW Safety Coat

Quick, convenient selection . . . the right treatment for specific injuries with M-S-A® unit-packaged First Aid Kits

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- orderly arrangement of contents for quick visual inventory
- cellophane-wrapped packages for extra protection
- each package illustrated with correct first aid technique
- clear, concise directions on lid for easy reference
- every unit an individual treatment to eliminate waste
- rugged 20 gauge steel case in bright red enamel
- your department initials in gold on the lid

For your ordering convenience . . .

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Adhesive Plaster		1 Pkg.	FA-2755
Adhesive Bandages 1" Waterproof	3 Pkg.	3 Pkg.	FA-2903
Ammonia Inhalants	1 Pkg.	2 Pkg.	FA-2156
Ammonia Ampoules	1 Pkg.	1 Pkg.	FA-2148
Compress Bandages 2"	3 Pkg.	3 Pkg.	FA-2486
Compress Bandage 4"	2 Pkg.	4 Pkg.	FA-2152
Eye-Dressing Packet No. 5	1 Pkg.	2 Pkg.	FA-2289
Foille ⅝ oz. Tubes	2 Pkg.	2 Pkg.	FA-12560
Foille ⅛ oz. Tubes	1 Pkg.	1 Pkg.	FA-12282
Gauze Bandage 4"	1 Pkg.	1 Pkg.	FA-2143
Merthiolate Swabs	2 Pkg.	4 Pkg.	FA-2898
Paper Cups		1 Pkg.	FA-2142
Sodium Bicarbonate Tablets		1 Pkg.	FA-2722
Triangular Bandage 40"	3 Pkg.	3 Pkg.	FA-2144
Tourniquet and Forceps	1 Pkg.		FA-2146
Tourniquet, Forceps and Scissors		1 Pkg.	FA-2704
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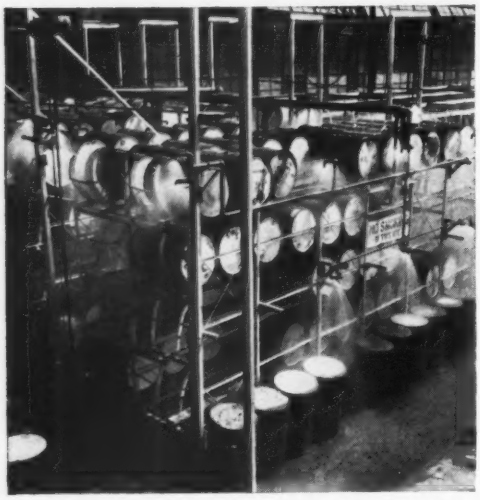
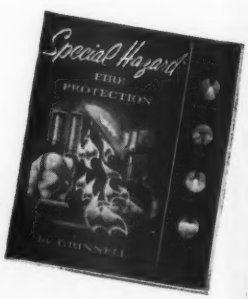


Water spray, applied to outside storage of paints and solvents, cools to inhibit internal pressure build-up and dilutes to prevent flammable vapor-air mixtures from developing.

SPECIAL FIRE HAZARD	WATER SPRAY	FOAM	CARBON DIOXIDE	DRY CHEMICAL
AIRCRAFT HANGARS	✓	✓		
ALCOHOL STORAGE	✓	✓	✓	
AMMUNITION LOADING	✓			
AMMUNITION MAGAZINES	✓			
ASPHALT IMPREGNATING	✓			
BATTERY ROOMS			✓	
CARBURETOR OVERHAUL SHOPS	✓	✓	✓	✓
CLEANING PLANT EQUIPMENT	✓	✓	✓	✓
DOWTHERM	✓			
DRYING OVENS	✓		✓	✓
ENGINE TEST CELLS	✓	✓	✓	
ESCALATORS, STAIR WELLS	✓			
EXPLOSIVES: MANUFACTURING, STORAGE	✓			
FLAMMABLE LIQUIDS STORAGE	✓	✓	✓	
FLAMMABLE SOLIDS STORAGE	✓			
FUEL OIL STORAGE	✓	✓		
HANGAR DECKS	✓	✓		
HYDRAULIC OIL, LUBRICATING OIL	✓		✓	
HYDRO-TURBINE GENERATORS	✓		✓	
JET ENGINE TEST CELLS	✓	✓	✓	
LIGNITE STORAGE AND HANDLING	✓			
LIQUEFIED PETROLEUM GAS STORAGE	✓			
OIL QUENCHING BATH	✓	✓	✓	✓
PAINTS: MANUFACTURING, STORAGE	✓	✓	✓	✓
PAINT SPRAY BOOTHS	✓		✓	✓
PETROCHEMICAL STORAGE	✓	✓	✓	
PETROLEUM TESTING LABORATORIES	✓	✓	✓	
PRINTING PRESSES			✓	
REACTOR AND FRACTIONATING TOWERS	✓		✓	
RECORD VAULTS			✓	
RUBBER MIXING AND HEAT TREATING	✓		✓	
SHIPBOARD STORAGE	✓		✓	
SOLVENT CLEANING TANKS		✓	✓	✓
SOLVENT THINNED COATINGS		✓	✓	✓
SWITCHGEAR ROOMS			✓	
TRANSFORMERS, CIRCUIT BREAKERS (outdoors)	✓			
TRANSFORMERS, CIRCUIT BREAKERS (indoors)	✓		✓	
TURBINE LUBRICATING OIL	✓	✓	✓	✓
VEGETABLE OIL, SOLVENT EXTRACTION	✓	✓		



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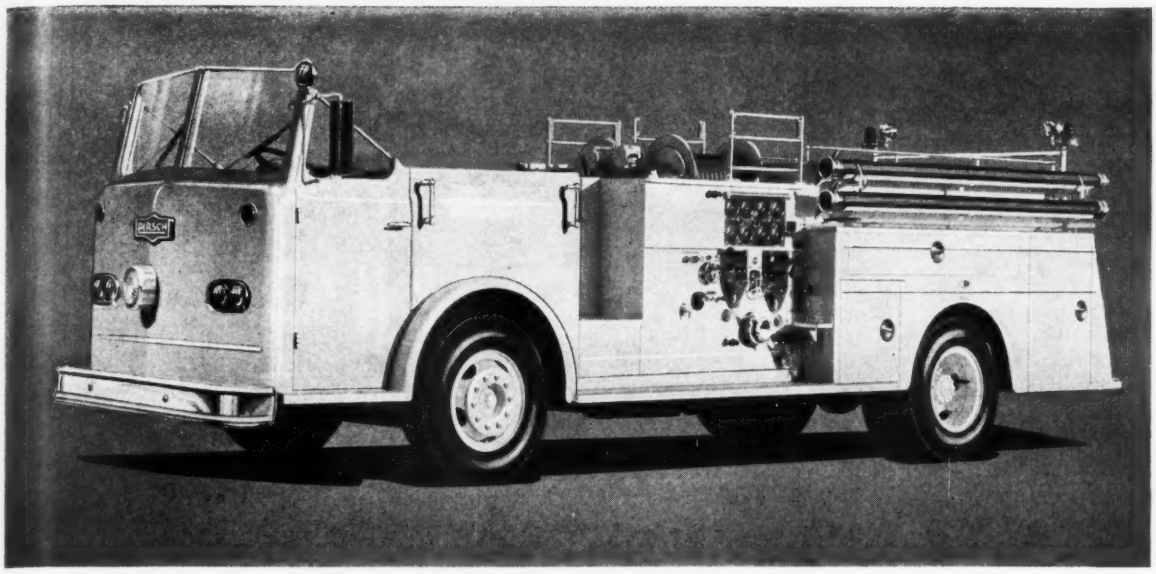

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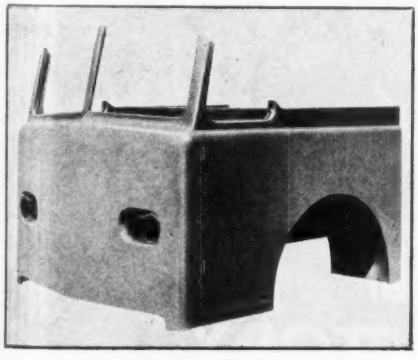

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FIRE ENGINEERING

The Journal of the Fire Protection Profession Since 1877

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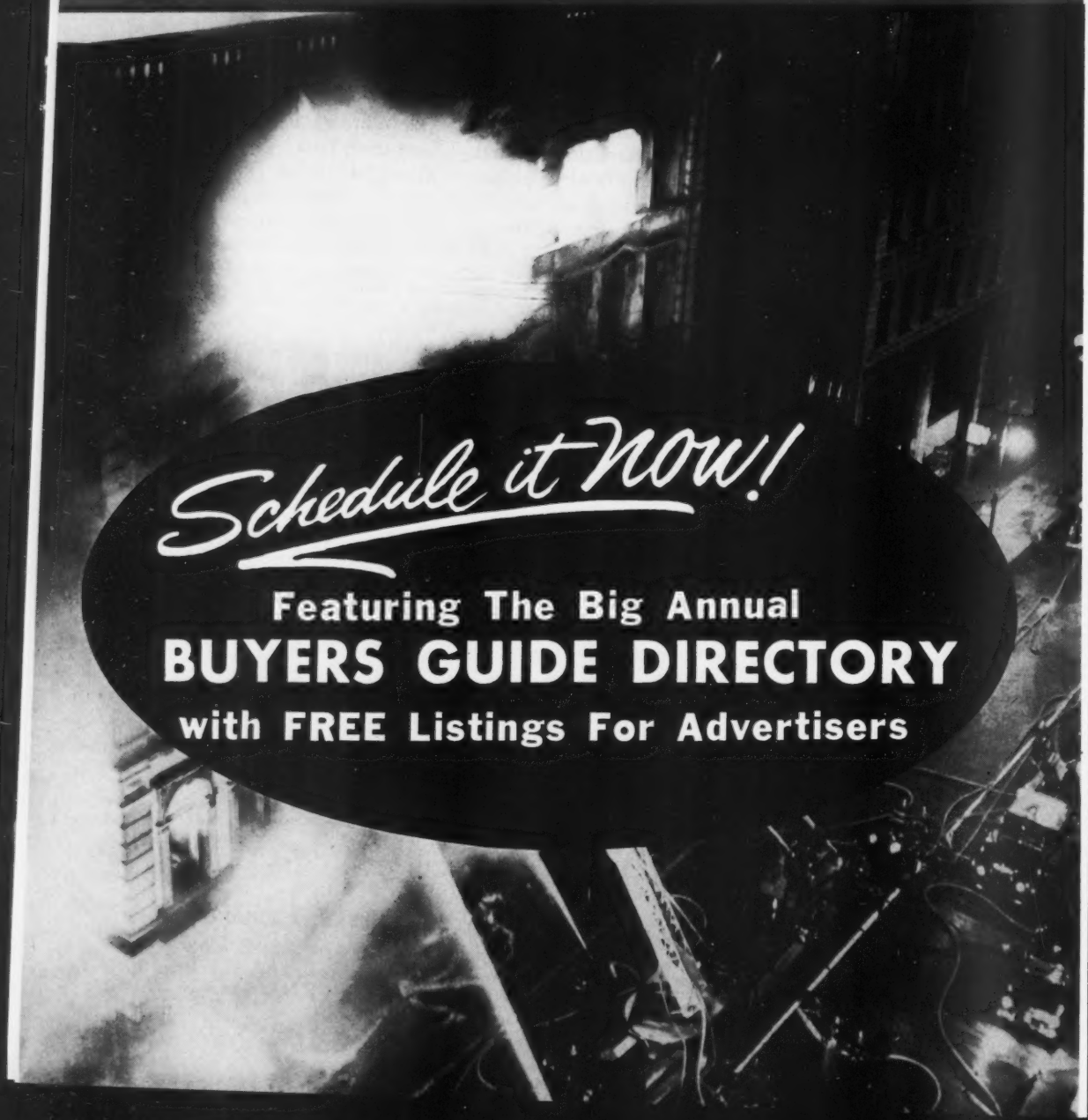

The Challenge of Annexation

The editorial theme of this, the year's most important issue, will be a depth analysis of "The Challenge of Annexation"—one of the serious problems facing many segments of the fire service today. How some municipalities have already solved the problem as well as how others are taking steps to minimize their growing pains is the basis of a series of articles that will make this issue a real "reference" volume.

And, in addition, all the regular editorial features and departments, which have caused **Fire Engineering** to be known as the "bible" of the Fire Service, will be included.

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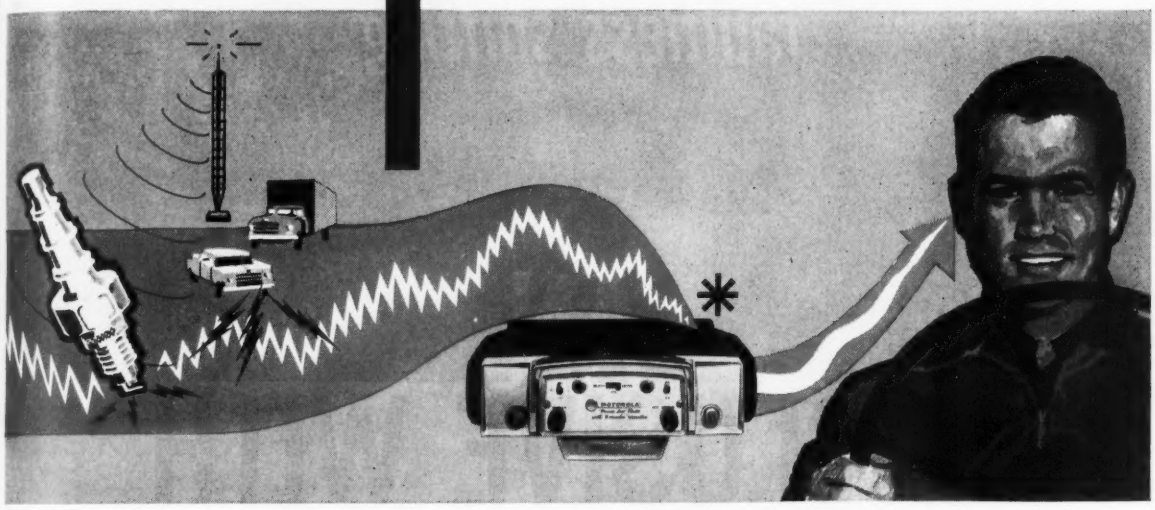

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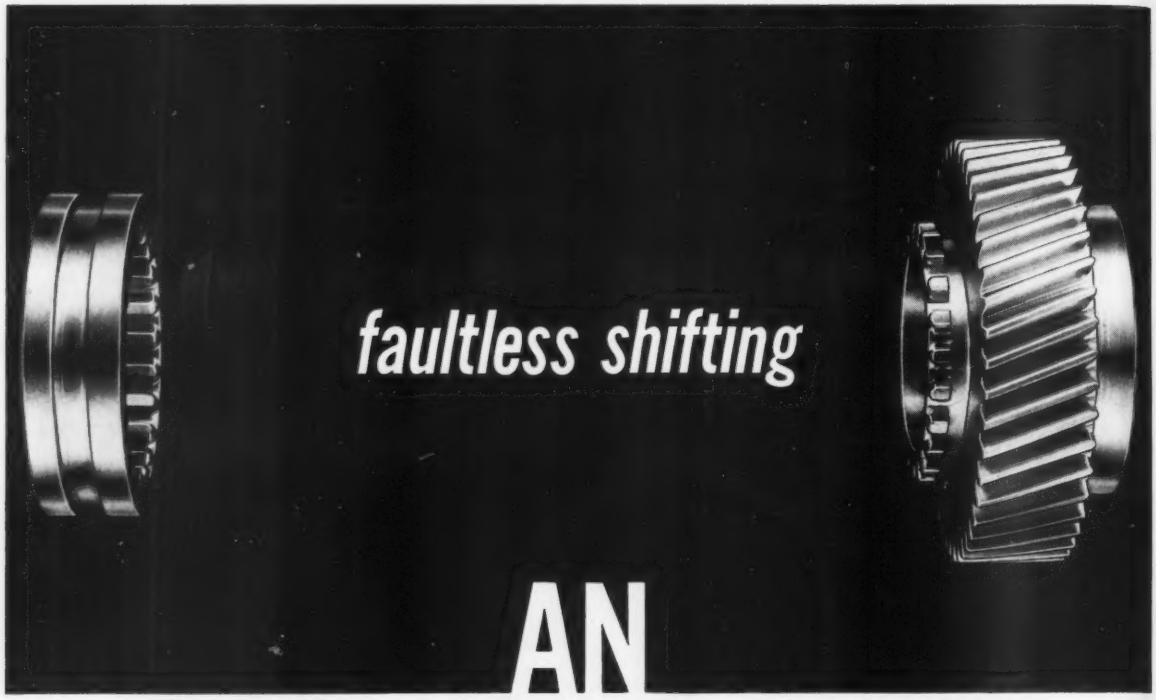

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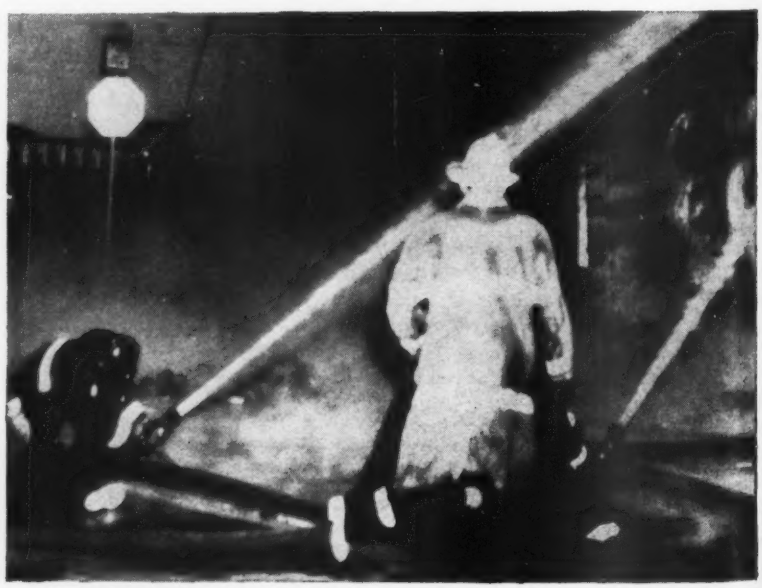


FIRE
ENGINEERING
THE JOURNAL OF THE FIRE PROTECTION PROFESSION SINCE 1877
VOL. 114, NO. 7 JULY, 1961

Arson—An Increasing Problem to the Fire Service

The recent annual meeting of the National Board of Fire Underwriters produced many interesting reports concerning important factors affecting the fire insurance business. One of these was of special interest to the fire service. The Committee on Arson, Theft and Fraud reported a two-fold increase in the number of fraud fires during the fiscal year ending April 30, 1961, and the reappearance on the national scene of professional arson rings.

As a result, special agents of the Board conducted 4,150 investigations of questionable fires as compared with 3,772 for the preceding year. Of these, 740 were classified as apparently set for the purpose of defrauding insurance companies. This compares with 398 in 1959-60. Insurance at risk in these cases exceeded $19,700,000, and of the 153 persons subsequently arrested and charged with arson or a related crime, 91 were assureds.

In the over-all category 661 persons were arrested, a 15-year high. Of these, 251 convictions were obtained, although these figures do not contain totals of dispositions of cases against juvenile offenders. At the same time it became apparent that organized arson rings were operating in the east and midwest. The committee suggested that the increase of such criminal activities may make it necessary for the National Board to set up "flying squads" of experienced special agents to permit investigation and surveillance to be concentrated on given areas at short notice.

The primary reason which comes to mind whenever arson increases is that business activity has declined and unscrupulous businessmen "sell out" to insurance companies in order to recoup at least a portion of their investment. Based upon the recent recession, this reasoning appears sound. However, this area is only one of several where set fires are of concern. Revenge for real or imagined wrongs and psychopathic fire-setting also plague the country. Thrill-seekers, who possibly never intend to harm anyone, have also contributed to the heavy fire losses of the past. The fire service as a whole must be interested in the apprehension of all persons who set fires and in the proper disposition and punishment of each offender, based upon the governing circumstances.

Arson is always a grave crime to the fire service. Set fires imperil the lives of many innocent victims and the lives of the men who must combat them as does the accidental fire. However, fraud fires are particularly insidious in that the same basic perils are present, but due to the use of accelerants and planned flame-travel paths, fire fighters may be faced with far more serious extension of fire upon arrival. Operating under this handicap, the outcome of such a blaze is more in doubt and the hazards more acute. Self-preservation alone is sufficient reason for firemen to loathe the arsonist who places the fire fighter in jeopardy each time the crime is committed.

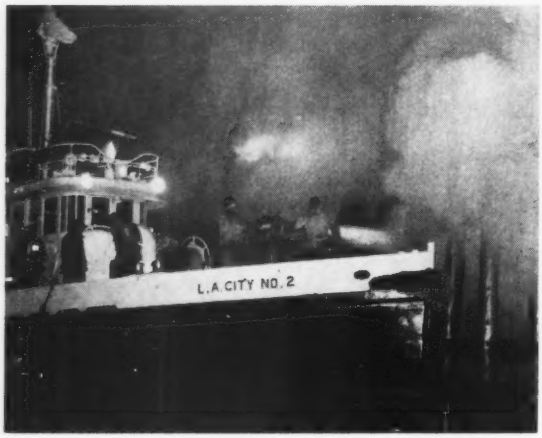
Much of this issue is devoted to subjects of interest in the arson category. They are intended to point up the fact that fire fighters should be and usually are the first persons to become aware of suspicious fires and frequently conduct or assist in the investigations that follow. Because of the increasing importance of this work all fire fighters should attempt to learn more of the nature of the subject in order that knowledge and understanding contribute toward lessening this curse. Some have the feeling that due to the criminal nature of arson, all investigations should be left solely to the police agencies. Nothing could be further from the truth. One authority, Brendan P. Battle, manager of the NBFU Arson Section, has stated that it is most unusual to carry prosecution of an arson case to a successful conclusion unless the local fire chief is a key witness.

By the very nature of fire fighting activities, students of fire suppression come to learn more about flame propagation than any other persons. Certainly the application of this knowledge in arson work should not be overlooked. Wise investigators depend upon the fire service for this type of support at every opportunity and fire fighters should take all steps necessary to assist in stamping out this crime.

The only basic factor that distinguishes the set fire from an accidental blaze is premeditation; the results are still about the same. Because of this, arson prevention, investigation and suppression are as much a part of fire service responsibility as are fire prevention and suppression. Alert fire chiefs have never tried to separate the two, but rather to combat both as a menace to the community. What is needed now is greater emphasis on arson to prevent it from getting out of hand.

Hlow O'Brien

A Los Angeles first

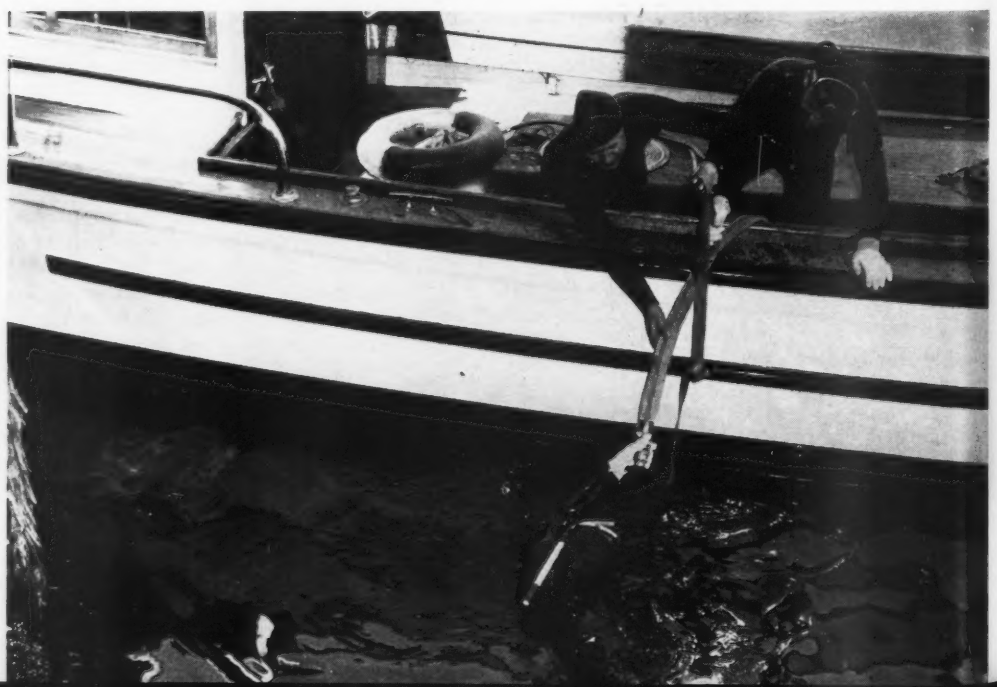


Fireboat crew (above left) sweeping underpinning of pier during actual fire. Conventional method is time-consuming and not always effective—*Los Angeles F. D. photo by Manwarren*

Los Angeles fire fighters employ jackhammers to open distributor nozzle ports in pier paving during fire. Underwater fire crews are expected to eliminate necessity for this laborious chore—*Los Angeles F. D. photo by MacNeil*

From the conventional . . . to an exciting new development . . .

Frogmen begin to stretch 1½-inch line from Los Angeles Fireboat No. 3 during test of procedure. Strap for attaching line to piling is attached about 4 feet from nozzle



UNDERWATER FIRE FIGHTING

By WILLIAM BARADA

FIRE DEPARTMENTS responsible for the protection of port and harbor facilities are keenly aware of the problems presented by substructure fires. For several months, strange activities in Los Angeles Harbor have had old timers scratching their heads. From time to time, a detail of firemen under the supervision of Division Chief W. W. Johnston, Jr., appeared at Fireboat No. 2 quarters and changed into skin diving gear. Then, dressed as frogmen, complete with masks, flippers, rubber suits and underwater breathing apparatus, the detail would disappear for the better part of a day, experimenting with a revolutionary technique for attacking stubborn, inaccessible fires burning in the substructure of docks, piers and wharves.

At first glance, the idea of swimmers handling loaded hose lines in the water appears fantastic. Experience with charged lines brings visions of back-breaking exertions at fires and drills. And, to others than skindivers, swimming brings visions of a struggle to keep one's head above water. Only an experienced skindiver could recognize the feasibility of combining the two functions—and that is exactly what happened.

The idea of utilizing skindivers to snake loaded hose lines beneath burning docks was born shortly after a disastrous substructure fire destroyed a great portion of the dock at the Matson Steamship Lines. Originator and developer of the new technique is Chief Johnston, who has been an enthusiastic skindiver for more than 15 years.

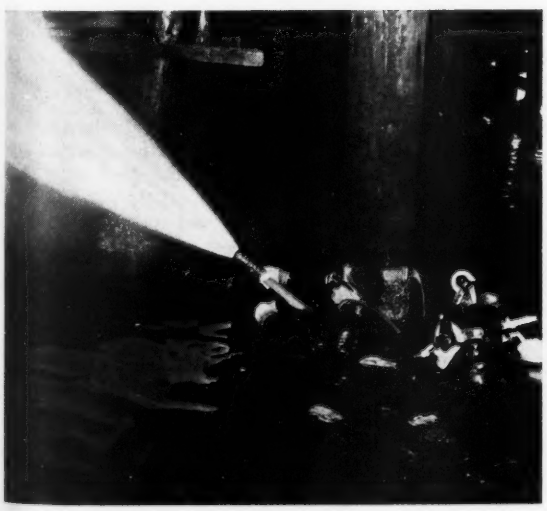
Working from Fireboat No. 3, Chief Johnston and a group of firemen skindivers were recovering submerged equipment lost in the harbor during the fire. Aware of the tremendous access problems encountered during the Matson dock fire, he decided to experiment with skindivers handling hose lines in the water.

Two 1½-inch hose lines were extended from the fireboat and handed to the skindivers. To everyone's amazement, the empty lines floated on the surface and could be easily extended to any desired length by a single diver. The lines could be snaked around and through the maze of piling beneath a dock with ease. No difficulty was encountered with snarling or tangling. The water acted as a lubricant eliminating friction. Surface obstructions presented no problem as the divers simply swam the lines beneath them. Without weight or friction, the empty lines followed the divers as easily as a balloon on the end of a string.

Loaded line experiment

The next experiment was conducted with loaded lines. Here again, the firemen were amazed at the ease with which the lines could be maneuvered. With nozzles shut off and no water flowing, the charged lines gave no resistance to movement through the water. The loaded line had little more weight than when it was empty. The weight of the water inside the hose was neutralized by submersion in water. The nylon hose jacket was buoyant and only the metal couplings had a slight negative buoyancy. These tended to slowly sink the loaded hose line when it was left untended. Beneath the dock piling this proved to be an advantage. The depth of water was utilized to take the lines beneath obstructing cross members and bracing. In this way, the loaded lines could be extended to any desired length.

Then came the big test. Could skindivers, equipped with masks and flippers, devise a method of holding their position in the water against nozzle reaction? How effectively could the divers play working hose streams beneath the decking of a



***One man operates 1½-inch line on substructure controlling it without difficulty as strap, visible just above water line, absorbs recoil**—Los Angeles F. D. photo by Manwarren*

***A single man adjusts and directs the 2½-inch fog nozzle strapped to pier piling. Manpower economy is one of the advantages of the method**—Los Angeles F. D. photo by Secor*

dock? The answer proved to be as simple and effective as swimming with hose lines.

A strap, fastened a short distance back of the nozzle, which could be quickly snapped around a convenient piling held the nozzle against reaction. With the nozzle strapped in place, the diver could direct the hose stream in any desired direction. No trouble was encountered from side reaction caused by kinks and bends in the line behind the nozzle. Fluidity of motion in the water permitted the rigid hose to flow into line behind the nozzle and the diver could direct the stream easily with one hand.

This simple method also provided easy maneuverability. A quick-release buckle on the strap around the piling enabled the diver to position or remove the nozzle speedily. With the nozzle shut off, the line could be advanced from piling to piling and quickly placed in position for an attack in a new area.

Subsequent experiments disclosed that 2½-inch hose lines, loaded or unloaded, could be handled and maneuvered almost as easily as 1½-inch lines. It was also discovered that spray nozzles could be strapped into position on a number of pilings to form an effective and complete water curtain in front of an advancing fire. This method could be used to arrest the progress of a fast-moving, dangerous fire with no hazard to the divers. The lines could be strapped into position and left untended until the fire was knocked down.

A busy port or harbor represents a tremendous investment to the citizens of its community. The impact of shipping and commerce, handled through harbor facilities, upon the economy of a city is difficult to estimate. A major disaster in a harbor would, no doubt, affect the lives of all citizens in the community. Modern fire prevention and fire suppression methods have gone a long way in providing protection to harbor facilities above the decking. This tremendous value depends upon highly flammable substructures for survival. If the substructure goes, all of the careful fire protection precautions for dock facilities are worthless and, too often, the entire structure collapses into the water.

It is true that substructure fires do not occur often. If they did, it is likely that piers and wharves would have underpinnings of noncombustible construction. The high cost of such construction prohibits its use, and the infrequency of underwater fires induce a false sense of security. For this reason, piers and wharves will continue to be built in the traditional manner and firemen will continue to face the almost impossible problem of extinguishing substructure fires.

Under-dock construction is a nightmare from a fire fighting standpoint. Attached to closely set wooden piling is a maze of crisscrossed wood timbers and stringers supporting a solid deck of 4-inch planks covered with thick asphalt and concrete. This entire man-made forest is soaked with creosote and oil which is fine for retarding deterioration by marine organisms, but creates an inferno when it starts to burn. The creosote and oil not only burn with an intense heat, they put out acrid fumes which make firemen's positions untenable without breathing equipment.

The arrangement of timbers would present a difficult fire fighting problem if the entire structure were accessible. With a solid lid of asphalt and concrete on top, and water underneath, it presents one of the most difficult of all fires to extinguish. The open construction invites a rapid spread of fire beneath the decking where it can travel out of reach of hose streams from both fireboats and land companies. Winds, which normally sweep over a water surface, provide plenty of ventilation for such fires and their rapid spread often can only be arrested at a noncombustible bulkhead or previously installed fire stop.

Usually the only approach to substructure fires by land companies is

Continued on page 551

Solid stream operation of 2½-inch fog line. Only one man is necessary for control, but team operates as a unit in keeping with skindiving safety rules

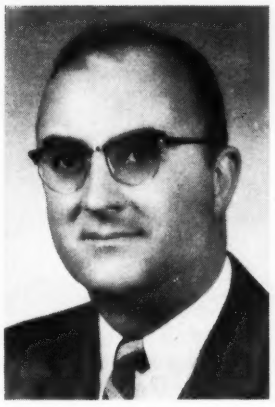
—Los Angeles F. D. photo by Secor

Underdock fire fighting team member Jim Johnston wears special lightweight Scuba equipment employed by Los Angeles Fire Department. Underwater breathing apparatus was designed for unique fire fighting requirements

—Los Angeles F. D. photo by Secor

Psychological aspects of juvenile fire setting

By C. D. BOSSART, D.S.C.*



PATHOLOGICAL fire-setting and the proper way to deal with persons who, for no apparent reason or logic, set fires is one of the biggest problems in the suppression of arson and incendiarism. Many of these persons have endangered and taken the lives of others and have destroyed vast amounts of property. The problem calls for the best efforts of the legal, medical and fire fighting professions for its solution. The aim must be to deal fairly with the pyromaniacs and at the same time fully protect the public. Surely, the same penalty cannot apply to the juvenile fire-setter who, because of some psychological behavior pattern, commits an act of arson, as it would to the arsonist who commits his act for fraud or to cover a previous crime.

Consideration recommended

Chief William D. Rossiter, chairman of the International Association of Fire Chiefs' Committee on Arson, reported to the IAFC Conference in Rochester, N. Y., last year that 50 per cent of all "set fires" were caused by children. The arson committee recommended that all levels of the fire service give the problem great consideration. It is necessary to reflect, to understand some of the workings of the juvenile mind, and to proceed with extreme caution and education to insure humane, intelligent and scientific treatment of persons responsible for such a large proportion of incendiary fires. Many states define arson as a felony, and all who are convicted of the crime must pay the prescribed penalty. The statutes of other states give the court the prerogative of determining the penalty depending on the facts of the case. While this practice may seem to provide too many avenues of escape for the arsonist who premeditates his crime for fraud or to cover another crime, leniency can be rightfully granted the pathological juvenile fire-setter who can be helped in his behavior pattern. Education and understanding within the fire service and legal profession must precede any solution of the problem.

Freud says that primitive man's regard for fire is analagous to love. He therefore reasons that the control of fire requires the ability to control the urethral impulses. William Stekel's well-known book (1924) stresses that "sexual root" is related to pyromania. He points out that pyromania frequently appears in juveniles with a sex problem, and in those who become defiant due to their own weaknesses and insufficiencies. The modern investigator does not altogether agree with Stekel, who distinguishes three types of juveniles who set fires to receive a sexual experience. Stekel also notes that impotent men and anaesthetic women become fire-setters.

This is strong talk, but it indicates to what degree the scientist has gone to explore the juvenile arsonist's reasons of behavior. Rosenoff, in his "Manual of Psychiatry," 1938, states that fire-setting impulses develop on the basis of internal conflicts, although the patient is not always aware of the relationship. In most cases, he says, analysis reveals that sexual repressions, maladjustments, and much resisted homosexual leanings are responsible for this symptom of fire-setting.

Very young children derive pleasure from watching a display of nature's elements such as rain, wind or fire. In their early attempts to acquire knowledge, they investigate and experiment with water, dirt, destruction and reassembly. All of these are directed towards testing their own powers and learning how to master these elements. Fire is one of the first elements to attract a youngster because it shows the magic of color and warmth and motion. It seems to spring from nowhere; it spreads with speed, yet it can be put out by blowing out the match or sprinkling water over its burning surface.

Because of this characteristic, many reputable observers believe that there is a natural born impulse toward arson in young children. They like the sight of fire, its heat and its flame, and they instinctively want to reach out for this source of satisfaction. As they grow older and can handle themselves, they want to investigate this pleasurable experience through the activity of fire-setting to a limited extent. Fortunately, in most cases this impulse is controlled in a few years through education and training so that when done in a controlled way, it is a harmless expression. The psychologist of modern times does say, however, that this fire-setting impulse does present itself as a symptom of some clearly defined abnormal behavior patterns.

Playing with fire

The pre-adolescent finds satisfaction in playing with fire. The city boy with his mates delights in setting fire to the corner trash box; the suburban or country child with his friends takes pleasure in blowing to life that last little spark that accidentally starts the brush or rubbish fire, much to the embarrassment of the parents. The problem child fire-setter is the one who plays alone and makes his little fire outside of the play situation.

This child is the one who develops moods. At one time it will be anger and jealousy with the mother who seems to give all her attention to a new baby, or resentment of the father who severely chastised the child for wrongdoing. Instead of going into the street with the rest of the gang to

Continued on page 569

* The author points out that the doctorate indicated by the letters after his name is not earned in the field of psychology and the thoughts expressed are not necessarily with that authority. His statements are made as a result of much research and personal interest in arson investigation. This article is intended to be a collection of the thoughts of those working with the juvenile arson problem, those who have contributed to the limited number of texts on the subject—the psychologist, the arson investigator and the court. While much of this is conjecture, especially among psychologists, it is considered desirable as stimulating thought on the subject which may ultimately lead to definite conclusions.

Capt. R. G. McNeil of Los Angeles Fire Department's photographic section uses 4 x 5 camera with special film holder to photograph debris at scene of suspected arson fire

Ten seconds after photographing the debris, Captain McNeil peels the film packet apart to obtain finished, full-size, dry 4 x 5 print. With this instant evidence, arson investigators can issue a complaint and file charges against a suspect, permitting him to be detained until a thorough investigation of the fire can be made

INSTANT PHOTOGRAPHY speeds

SEVERAL of the nation's fire departments are using a relatively new type of instant photography to speed arson investigations. Seconds after photographing debris at the scene of a fire, officials have a series of top-quality 4 x 5-inch pictures immediately ready for use in ensuing investigation and/or prosecution.

This saving in time enables fire officials to initiate investigative procedures much more quickly than when relying solely on conventional film, and may help curtail the growing number of arson cases.

The instant 4 x 5 pictures are made possible by teaming a Polaroid Land 4 x 5 film holder with the department's 4 x 5 press or view-style cameras. The holder slips into the cameras exactly like regular cut film holders of the lock-rib type and produces finished black-and-white pictures in 10 seconds.

Getting each photo on the spot, investigators know right away whether their pictures are properly exposed, and if they contain sufficient detail for evaluation during their initial probe or for possible future use as evidence in court. In addition, due to the extremely difficult lighting conditions under which arson investigators frequently have to work, many departments are using the new 3000-speed 4 x 5 film when photographing debris or fire-blackened evidence. The high-speed film enables investigators to retain contrast and sharp detail needed in photos made under adverse lighting situations.

Immediate evidence

One of the first units to start using the method as a weapon against arson was the Los Angeles City Fire Department. According to Captain R. G. McNeil, director of the department's photographic section, the photos are used primarily to provide immediate evidence to support the arrest and detention of a suspected arsonist.

Captain McNeil points out that the department's arson investigators frequently are able to trace a suspected arsonist shortly after a fire has been extinguished. Unless they have evidence on hand to substantiate the possibility that arson has been committed, they do not have the authority to issue a complaint and file charges against the suspect. He cannot be kept in custody.

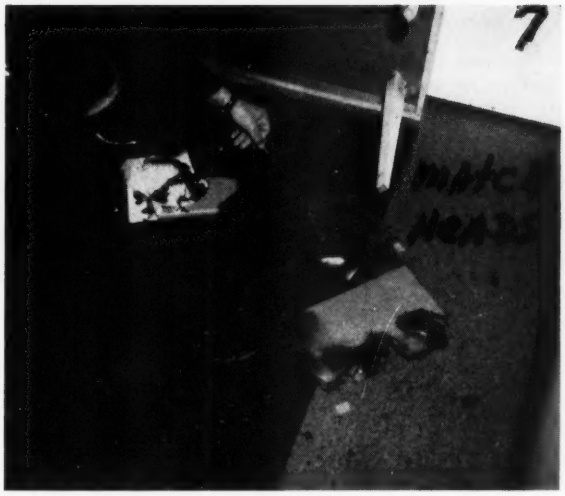
"Without a doubt, arson is one of the toughest charges to file and make stick," McNeil said. "If our investigators think arson has been committed but don't have any immediate evidence to back them up, their hands are tied. They can't arrest a suspect first and find their evidence later."

Prior to September 1959, the department's arson detectives occasionally had to delay filing charges against a suspect until photographs taken of debris at the scene could be processed and printed by the photographic section. With this evidence in hand, investigators could then issue a complaint authorizing temporary detention of the suspect until a more thorough investigation could be made. "Of course, the delay was risky," McNeil said.

Under the department's present set-up a member of the photographic staff shoots several one-second pictures of room interiors, gutted framework, electrical connections, stoves and other heating elements, windows and doors, containers that might have held flammable materials, etc.

McNeil's men frequently back up these shots with pictures made on conventional film in the event a court demands negatives for comparison with the black-and-white prints. Many departments use Polaroid equipment for this purpose because one of the

Reporting back to office, Captain McNeil, Chief Arson Investigator A. P. Fasich (center) and Investigator L. A. Bullard examine the series of photos taken during investigation to build their case for prosecution



Copy print of an instant 4 x 5 photo taken by Lompoc, Calif., Fire Chief F. K. Pollard at scene of a suspected arson fire. Prints are coded right at scene so they may be identified at a later date for use as evidence in court

arson probes

three types of film available for the film holder also produces a negative that can be retained and used in the darkroom as a conventional printing negative. The instant 4 x 5 pictures snapped at the scene are handed right away to Los Angeles arson detectives and used to support their arrest of a suspect pending further investigation.

Shopping center fire

Another department which has found the speed advantage of the 4 x 5 photos valuable as an arson investigation tool is the Lompoc, Calif., Fire Department. When a fire of suspicious origin raced through a large shopping center about a year ago, causing thousands of dollars damage, Fire Chief F. K. Pollard photographed the burned-out buildings, gasoline-soaked floors, milk cartons stuffed with excelsior, etc. "Even before our crews were finished with their clean-up operations, we had enough pictures on hand to reconstruct the fire and trace its path through the shopping center," Chief Pollard said.

Chief Pollard's pictures were combined with a diagram of the shopping center to form a picture-plan which showed the exact location and extent of the fire damage, placement of combustible materials, etc.

"This detailed plan was of tremendous value to us in picking our suspect, and it will be included as part of the evidence we have against him when his case comes up in court," Chief Pollard said.

In addition to the obvious speed advantage of on-the-spot photography, many fire departments, particularly those located in small cities and towns, which do not operate their own photographic laboratories use this method because of a cost factor.

One such department is located in South Euclid, Ohio. As Fire Chief William Fibich puts it: "Our department has relied on photography for some time as an arson investigation and fire prevention tool. But we're fire fighters—not photographers. The pictures we took often didn't come out properly, and we were left without the picture proof we needed for use in court. This was expensive as well as time-consuming because we were wasting a lot of film.

"About two years ago, we started using a Polaroid holder with our Speed Graphic camera. Now, any one of my men can take pictures good enough to be used in court because we can check each print on the spot, so we're always sure we have what we need before leaving the scene."

Many departments which formerly hired commercial photographers now rely on 10-second pictures because of the cost and convenience advantages. Chief J. N. Farmer of the Petersburg, Va., Fire Department explains that when his arson and fire prevention investigators depended on the services of a commercial cameraman, they were charged about $5.00 for a daytime picture and $10.00 for a night shot. "Not only were these prices prohibitive," Chief Farmer said, "But we still had to wait eight or nine hours—sometimes even a full day—before we had prints to use in our investigation."

He also pointed out that the commercial photographer "wasn't always available when we needed him, and more important, he didn't always photograph exactly what we wanted the pictures to show, even when one of our investigators supervised the job. Using our equipment, our men know they have the pictures they want before they leave the scene so we can begin our investigation immediately," Chief Farmer said. "And then 1,500 pictures we shoot each year cost us less than $600." □□

How firemen can assist in arson in

Captain James Kehoe (left), Chicago F. D. Arson Squad and author investigate site of blaze to determine if arson or violation of code was responsible for fire

Captain Kehoe and author find origin of fire in boiler room during investigation. Cooperation of fire fighters with investigator is important factor in arson work

By JOHN KENNEDY*

FIREMEN everywhere can assist arson investigators by being extremely careful about attributing a fire to any cause whatsoever unless they are reasonably sure of the circumstances. The very nature of a fire, and particularly an incendiary fire, causes high temperatures and alters, changes or destroys the physical characteristics of the materials which are burned or affected by the fire. In some cases, it conceals or changes the nature of the evidence of the incendiary origin of the fire.

Most fire causes cannot be determined without long and careful investigation. In some instances, the removal and examination of tons of debris is necessary before evidence which will indicate the cause can be uncovered. Some set fires are never detected, because they are attributed to other causes by firemen, and never investigated.

Every fire has a cause. There is also a reason for every fire. Cause and reason are often used as synonymous terms—they are, however, quite different.

When used in connection with an arson investigation, *cause* is defined as: That which occasions or effects a result. *Reason* is defined as: A motive leading to an action. The cause of a fire may be accidental, malfunction of equipment, or arson, as well as other causes. The reason for an incendiary fire may be any one of the motives for arson.

"Cause unknown"

There seems to be a natural reluctance among fire chiefs and firemen to admit that they do not know the cause of a fire. Instead of listing a fire as "Cause Unknown," some officials attribute it to various general causes with no apparent regard to the existing evidence or the lack of it.

Many firemen, with years of practical experience, have been confronted with confessions of persons who admit to setting fires which the firemen had attributed to other so-called "natural" causes.

* Chief Special Investigator, General Investigations, Inc. This article is condensed from an address by the author at the 20th Annual Nebraska State Fire School. All the material is contained in one chapter of a book, "Fire and Arson Investigation," soon to be published by the author.

investigation

Some of the favorite terms listed by firemen, when they are not certain of the cause, are: Faulty wiring; children playing with matches; spontaneous ignition; rats nibbling on matches; sparks from stove; defective flue; burning rubbish; careless disposal of smoking materials. The very general and indefinite nature of these causes clearly indicates that in most cases they are based on assumptions, guesses or vague possibilities, rather than evidence.

Incendiary fires are often fires of major or total proportions in spite of the prompt arrival of the fire department, or the efficient fighting of the fire. The reasons for this are simple.

Incendiary fires often involve accelerants. These accelerants are usually derivatives of petroleum products, such as kerosene and gasoline, but other liquids or chemicals are also used to raise the temperature of the burning, to lead the fire from one part of the structure to another, or to accelerate the pace of the fire. Hence, the name "accelerants" is given to this class of incendiary aid.

In order that fireman may be better prepared to assist the arson investigator, they should know some of the requirements for convicting the arsonist. The complex nature of the crime of arson makes it one of the most difficult crimes to prove in court. Legally, three facts must be proven to convict the arsonist: (1) There was a fire; (2) the fire was of incendiary origin; (3) the person accused either set or procured the setting of the fire.

Motive and intent

The motive for the fire is not an essential element of the crime of arson. That is, it is not necessary to prove the motive in order to convict the arsonist, according to our law.

It is, of course, necessary to prove intent, that is, that the burning was wilful and malicious. Do not confuse motive with intent. Intent is an essential part of the crime of arson. Motive is the reason for the crime. Motive is not an essential element of arson while intent must be shown to prove arson. Intent involves the will of the doer and indicates the wilful, malicious nature of the burning and is part of the act of burning. Motive involves the desire rather than the will and is the occasion which results in the act. However, although not a legal necessity,

The fireman inspecting a fire scene prior to the arson investigator's arrival, would do well to anticipate the investigator's questioning and arm himself with the answers to the following 25 pertinent questions:

1. Where did the fire originate?

2. What is the size and dimension of each room or building concerned, and its distance and direction from other rooms, buildings, or other related objects?

3. Are any contents "burned out of sight?"

4. What type of fuel was used?
- **a. For heating**
- **b. For power**
- **c. For generating**
- **d. For auxiliary engines**
- **e. For hot water**
- **f. For special processes**
- **g. For other purposes**

5. Where do power lines enter the premises?
- **a. Any evidence of ruptures or failures?**
- **b. Where are the transformers or fuse boxes?**

6. Where are watch clock stations, or watchmen's key stations?

7. What are serial numbers and makers' names and model numbers of machinery, particularly if this machinery is involved in the fire?

8. What is the inventory by contents, by building, or what? This is important if the possibility of contents being removed from the building prior to the fire is a good one.

9. Where is each designated entrance or exit?
- **a. Any other possible exits or entrances?**

10. In what type neighborhood is the loss located?
- **a. Any possibility of neighbors viewing premises from homes or places of employment nearby?**

11. Where are the nearest fire hydrants or water sources?
- **a. Are they damaged?**

12. Are buildings sprinklered?
- **a. Any sprinklers that did not function?**

13. Any fire and/or burglar alarms?
- **a. Automatic?**
- **b. Other type?**
- **c. Did they operate satisfactorily and, if not, why?**

14. Was the office destroyed?
- **a. Were records destroyed?**
- **b. Any office machines or equipment missing?**
- **c. Was the safe opened?**

15. Were the records saved?

16. Were the files fireproof?

17. Is there any evidence of unusual heat during fire, such as fused copper or brass fixtures?

18. Is there any evidence that explosions occurred?

19. Were there any gasoline, kerosene, or other flammable liquids on the premises?

20. Is there any evidence that the fire was accelerated or that trailers were used, or time devices employed?

21. Is there any evidence that contents have been removed, either before or after the fire?

22. Is the fire scene protected and the watchman properly instructed?

23. Exactly what is the evidence of incendiarism or other suspicious circumstances?

24. Are all records properly prepared so that the arson investigator can look them over, and are there extra copies for him?

25. Are the names and addresses of important witnesses available for the arson investigator?

most good prosecutors consider incentive plays an important, practical part in the presentation of their case, because of its effect on the judge and jury when it can be shown. Therefore, arson investigators must work diligently and efficiently to furnish the prosecutor with evidence concerning the reason, motive, or incentive for the fire.

Even though a suspect has confessed to arson, the investigator must still gather evidence to prove the crime, and the firemen can assist by preserving and safeguarding such evidence. Most courts will not allow the introduction of a confession until the prosecutor and investigators can prove the "corpus delicti." That is, the court will not allow anyone to confess to a crime until the investigators and other interested parties are able to prove that a crime has been committed. The courts require the investigators to prove the "corpus delicti" of the fire, or the incendiary origin, by means other than confession, before they will allow the introduction of the confession into evidence.

Before the fire

Firemen, before they arrive at the fire scene, can help the arson investigator in two principal ways. While most metropolitan departments keep adequate records, many volunteer and rural departments are not equipped or staffed to keep elaborate ones. This is understandable, but certain important information should be recorded and preserved, for example, the exact date and time of the alarm; the method of transmitting the alarm (fire alarm box, telephone, in person, at the fire station); the nature of the alarm (if by telephone or in person, exactly what was said by the person who reported the fire). Did he report an explosion and a fire, or just a fire, or just an explosion? Did he give the correct address? The identity of the person giving the alarm should be recorded. How did he learn of the fire? Did someone tell him, or did he see the fire? If so, what was he doing at the time?

The second way in which firemen can assist the investigator before arrival at the fire scene is to observe and mentally note weather conditions en route, for example, rain, snow, ice, wind velocity, wind direction, temperature, visibility. Firemen can also assist any subsequent investigation by being observant while fighting the fire. They should note, for example, the exact location of the fire and whether it is inside or outside of the building, the floor or floors, the room, and whether or not it is coming through the roof. Is the fire in a dwelling, a factory, and is the building wood or brick? Is it a large fire? Has it extended to all rooms? Is there any indication of separate, unrelated, simultaneous fires?

They should note if the fire is confined to one portion of the building, or spreading rapidly, especially against the wind. This may indicate the use of an accelerant or trailer. If the fire spread is unusually fast for the type of structure, it may indicate an incendiary fire.

How does water affect the fire? If there are any "blowbacks" when a stream of water hits the fire, it may indicate some accelerant was used. They should be alert to note if the stream of water quenches the fire or merely contains it, and when the stream is lifted, the fire blows back in an unusual manner.

Color of the smoke is frequently important. Yellow smoke may indicate that sulfur or a derivative, film negatives or gunpowder is burning. Black smoke may indicate that an accelerant such as gasoline, kerosene or other petroleum derivative is burning. Firemen should be alert to any unusual odors which may indicate the use of accelerants.

The fire fighters should also note any signs of forced entry before the arrival of the fire department. This may indicate that the fire happened after someone forced entry, and might give valuable information to the arson investigators when they question the firemen. Often, when firemen are interviewed, they are unable to say how they entered the building and whether a door was open or they had to force entry. It would be very valuable to the arson investigator if every firemen could remember just how he entered the building, and note how other firemen are entering. Do they come through open or unlocked doors or windows, or must they force entry?

What is the condition of the standpipes or hydrants? Have any attempts been made to damage them or to render them inoperative? In one case in which the writer participated, the arsonist had damaged the rim of a fire hydrant, making it impossible for the firemen to hook up their lines. This required that 1,600 feet of hose be laid to the nearest unbroken hydrant, causing delay during which the fire spread rapidly.

After the fire

The fire chief of Wilmington, Del., some five or six years ago, issued an order to all chief officers and commanding officers that immediately after a fire was knocked down, the officer in command should not allow any overhauling or salvage work until he determined the cause. If he could not determine the cause, or if it appeared suspicious, the arson investigator was to be called immediately. In the year preceding the order, three cases of arson were reported and investigated in Wilmington. In the year after the order, 28 cases of arson were reported and investigated.

The writer believes many fire departments can establish a similar improved record by taking certain precautions immediately after the fire has been extinguished. The officer in command should post sufficient guards to properly secure the fire scene until he can make his inspection. This security should exclude not only outsiders, but even firemen and policemen. No one should be permitted to roam the fire scene or disturb the debris. Many cases have been lost because of the failure of fire officials to observe this rule.

In one instance, a well-prepared arson case was lost because it was proven by the defendant's attorney that the premises had not been protected from the time immediately after the fire until the arrival of the arson investigator. The arson investigator had introduced into evidence a book of matches found at the fire scene, but he could not rule out the possibility of their having been dropped by some casual observer who might have wandered into the room where the fire started.

In another case, a fire chief posted a guard on the premises, but did not properly instruct him. When the owner of the building arrived, he identified himself and the guard allowed him to enter the building. The owner then, according to the testimony of an accomplice, removed the books and records of the corporation and also dismantled an incendiary device which he had used to set the fire.

The officer in charge should make his own inspection with one or two selected aides armed with paper and pencil, so that proper written reports or notes can be made of any pertinent facts, including the date and time. These officers should conduct themselves as though they were going to take the witness stand and be grilled about minute details of their inspection months later, because it is a very good possibility.

Fire officials and firemen should be very careful when making an inspection of the fire scene after the fire. They should keep in mind the very probable possibility that an arson investigator will interview them later,

Continued on page 556

CASE HISTORY: Alameda, California

Compulsive fire-setters must be reported

By CHIEF WILLIAM L. HILBISH

IF YOU COULD IDENTIFY a pyromaniac at large in your city, what would you do? No fire fighter or policeman would hesitate for a moment in answering that question. One would think that any sane person would immediately inform the proper authorities about a pyromaniac.

However, in Alameda, Calif., during the months of December 1960 and January and February 1961, a psychopathic fire-setter roamed freely about the streets of the city, her record well known to the authorities of a state hospital and to a welfare worker, yet unknown to the Alameda Fire Department and the police. The cost was appalling!

Landmark destroyed

That rarest of all compulsive arsonists, a woman pyromaniac, destroyed more property value before she was stopped than the cost of all her psychiatric care and treatment could ever be. She destroyed one of Alameda's landmarks when she burned the Christ Episcopal Church on the corner of Santa Clara Avenue and Grand Street—two blocks from the nearest fire station. The fire department managed to save the recently built Sunday school and the gymnasium building.

A true pyromaniac, possessed by an undefinable desire, half aware, half unaware of what she was about to do, this woman did not premeditate her actions and used whatever materials she could find on the site to start her fires. On the fateful morning of the first church fire she was driven by her compulsion out into a deep fog at 3 o'clock in the morning. Her husband, who knew of her pathological malady, was at work. She had been alone and unable to sleep. Her stomach, as she told in her eventual confession, was fraught with tensions she could not explain; caught in a painful knot which could only be untied by the sound of sirens.

As she walked through the drifting mists of the Alameda fog, in her sick mind was another kind of fog wherein her twisted emotions lied to her for, as she later said, she had gone out to mail a letter. She had come across the church building in the fog unwittingly. But, once there, she knew what she must do. With trembling hands she ignited some dry leaves with her cigarette lighter close to the shingled side of the church. Then she returned to her home a block away to wait for emotional release. But the knot in her stomach remained. She heard no sirens. So she went back to the church. When she smelled smoke, she went home to wait again and not for long.

This fire was cataloged by the fire department as one of "undetermined origin," in which category must be many of these pyromaniac-set fires. Despite intensive investigation, a long, hard look at the facts gave no more than a whisper of suspicion that it had been set.

The date of the fire was two days after Christmas. The church had been the scene of peak activity. It had been cold and the heating equipment had been working at capacity. Many conceivable causes came to mind—no probable causes.

After this fire, Alameda came upon a period of a rather unusual number of "sets" which looked at first like juvenile mischief fires. These were in reality unsuccessful attempts by the same woman pyromaniac, but this was not known at the time. These consisted of a certain pattern: A broken window with burning paper thrown inside. The attempts covered a large part of the city; it was later found she had been traversing the area on her bicycle. All were negligible or minor-loss fires, only because of the woman's ineptitude and her lack of premeditation, coupled with quick fire department action.

Consider the extent of Mrs. X's activity in the light of information obtained from her after she had been apprehended:

She had broken windows in a grammar school and a high school and igniting paper towels, again using her cigarette lighter, had thrown the burning towels in the windows. She had started a fire with some paper in a warehouse, reaching through an open window to do this. She attempted to start fires in two houses by reaching through an open window and setting the curtains on fire.

She started a fire in a mattress under some steps. In the early morning, also on a foggy day, she tried to burn a vacant house by igniting some paper hanging from the basement ceiling. At about 6 o'clock in the morning she tried to torch a home painted yellow. She did not like the yellow, she said later. And on that same day she tried to set another fire in a dwelling. Then she tried to burn a building which was under construction, breaking a window with a rock and cutting a finger in the process.

By this time the arson bureau was thinking in terms of a juvenile gang, though Alameda is quite free of gangs. Shortly, however, a series of eight fires, all in the same area, showed the same illogical modus operandi and the juveniles theory went out the window. These eight fires were all in a space of three blocks by one block and in one case, threw a real scare into a merchant who stood to lose thousands of dollars in accounts-receivable had the fire not been promptly extinguished. All these fires were thoroughly investigated under the author's orders. "Look for a 'pyro' " were the instructions.

In the meantime, this woman had been interviewed by a welfare case worker who, knowing her background, had asked if she had any knowledge of the Christ Episcopal Church fire. Mrs. X told the case worker that she could have started the fire, but that she did not know. Incredibly the name of the "pyro" the fire department was so actively tracking down stayed in the case folder.

Then a second church fire occurred. That alarm added strange coincidence to the mystery because it was received at exactly the same time as the Christ Episcopal Church fire—3:57 a.m.

The department saved some of that church, but all the time the men were fighting the fire, they were thinking of stopping the next one because now they knew for sure they had a pyromaniac to deal with. At 4 o'clock in the morning the writer called in two of the arson men and ordered them to find the maniac.

Two line firemen from a nearby fire station had reported strange behavior on the part of a woman whom they had first seen when she came to their station to register her bicycle. They related how she seemed "too interested in firemen and the fire department."

Continued on page 551

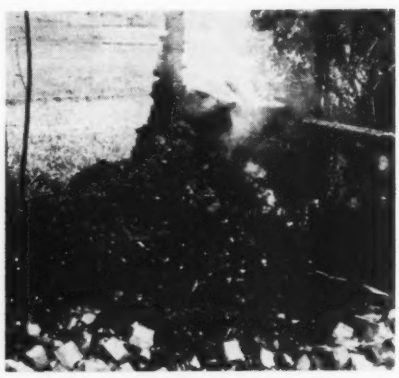
Recovery of flammable liquids from a burned structure

A test was made of the fire building approximately 10 minutes after fire was initiated. The door to the small room is on the right

Experiment indicates arson investigation method is useful where building is completely destroyed by fire

By JOSEPH D. NICOL*

AN EXPERIMENT to determine the feasibility of recovery of flammable liquids from fires of total destruction, was conducted at Michigan State University by the School of Police Administration and Public Safety, the Department of Safety Services, and the East Lansing Fire Department. An unused building on campus was surveyed for salvage or destruction and, for economic reasons, the latter course of action was considered desirable. The isolated location of this structure made burning a feasible means.



The debris of building in corner of a small room. Residue from which kerosene was recovered was obtained here

The building consisted of two rooms with a loft overhead. One room, 13 by 26 feet, had a concrete floor; the other, 26 by 30 feet, had a dirt floor. The walls, loft floor and roof were constructed of wood. Since the building contained no furniture, salvage chairs and rugs were arranged as in a typical living room, in order to create a seminormal, combustible condition resembling a residence.

Approximately 2½ gallons of kerosene were poured over the furniture and rugs in the small room. One gallon of gasoline was used to saturate a thin layer of loose straw on the dirt floor of the large room. A trail of gasoline, serving as a fuse, led out of the door of the building.

The fire was started at 2:00 p.m. and permitted to burn freely. Flying sparks were suppressed by means of a fog stream directed horizontally from an aerial ladder. This was kept high enough so that it had no influence on the course of the fire which burned briskly with no unusual action. The entire structure was consumed in approximately one hour. At this time, the residue was cooled with a minimum of water.

At 4:30 p.m., one and a half hours after the fire was considered out, and when the area was cool enough to enter with comfort, the residue was examined for traces of petroleum products. In the ashes in the small room, kerosene odor could be detected and, likewise, in the large room, gasoline odor was noted. Specimens of the ash were collected in both areas, preserving each in airtight containers.

The collected specimens were subjected to vacuum distillation at room temperature using Hnizda's method.[1] A total of 25 milliliters of liquid collected yielded 1 milliliter of gasoline from 1 quart of specimen from the large room. One-half cubic foot of residue from the small room produced 1 milliliter of kerosene for 30 milliliters of total liquid collected.

Although flammables are frequently found in cases of suspected arson, it might seem futile to collect specimens from a fire where the building is totally destroyed without benefit of fire fighting. The experiment described above suggests that specimens should be collected in any case of suspected arson.

In spite of extensive destruction, residues of flammables may be present. If the site of the origin is not obvious, then several separate samples should be collected, keeping each in individual airtight containers. Two to 3 quarts of residue should be collected for each sample.

The author does not wish to convey the impression from this experiment that all cases of arson will yield flammable residues. Consideration should be given to the fact that the accelerants were placed at low, and therefore, cool points in the building. Additional experiments are needed to answer the question of the probability of recovery where the flammable liquids are located at higher points in the fire. □□

* Associate Professor, School of Police and Public Safety, Michigan State University.

[1] Glenn D. Bennett, Journal of Criminal Law, Criminology and Police Science, 49(2):177 (1958).

UNDERWATER FIRE FIGHTING

Continued from page 542

from above. This means digging and cutting holes through layers of asphalt and concrete and solid planking to provide openings for cellar pipes and distributor nozzles. Unless such holes are provided during construction of the dock, cutting them in time to stop a fast-moving fire is extremely difficult. At best, the firemen take a terrific beating from heat and smoke and, even if they are successful, they can only confine the fire. Distributors and cellar nozzles dropped through a deck cannot completely extinguish a substructure fire any more than they can completely extinguish a basement fire. Often, substructure fires have spread so rapidly that firemen working above have been forced to abandon equipment and apparatus on the dock.

Fireboats, working from the water side of a dock, are not in a much better position. Heavy streams, slanted upward beneath the decking can sweep a substructure and knock down the worst of a fast-moving fire. Their effect is similar to that of wagon batteries and water towers in a building fire. Heavy beams and cross members obstruct penetration of the stream and the maze of wood bracing and piling provide hidden spaces through which fire can travel, out of reach of fireboat streams. As a result, substructure fires which have been swept by a fireboat and knocked down will often spring back to life and continue to spread after the boat has passed.

Trained firemen still needed

In the final analysis, the fire service has never found a substitute for trained firemen who move in with hand lines and extinguish a stubborn fire. As a result, Los Angeles Fire Department hopes to provide the same service at under-dock fires with frogmen that firemen perform at building fires when they move in for close attack.

Naturally, there were a great many questions to be answered before such a radical departure from traditional methods of fire fighting could be accepted by administrative officers. The responsibility resting upon the shoulders of a chief officer makes caution toward change imperative. Millions of dollars in property value and the lives of citizens and firemen are often dependent upon his decisions. Under these conditions, the hesitancy to adopt new and untried techniques is understandable.

But the fire service cannot stay abreast of fast-breaking industrial innovations by standing still. Progressive chiefs are alert to developments in fields unrelated to the fire service and are adopting equipment and techniques which can be applied to fire fighting. The ready consideration of fire fighting frogmen for combatting substructure fires is an example of the open-mindedness of the present administrative officers of the Los Angeles Fire Department.

Questions to be answered

Of course, no program can be accepted by all officers until it has proved itself in action. Skindivers have shown they can handle hose lines beneath the maze of piling under docks. Teams have been trained and are drilling regularly. Special equipment has been devised and ordered to replace the personal equipment of the men participating in the experiments. Some questions still remain to be answered, however.

Tests conducted with breathing apparatus disclosed that neither the apparatus designed for regular fire service, nor that used by skindivers, is completely satisfactory. Fire fighting skindivers must maintain buoyancy and maneuverability in order to handle hose lines on the surface and still have both hands free. Heavy, cumbersome equipment causes unnecessary exertion and soon exhausts a swimmer. Also, the full-face mask, normally required for fire fighting, is unsatisfactory in the water. Experiments conducted with special equipment developed by U. S. Divers' Co., have disclosed that a small, lightweight tank, equipped with a regular skindiver's mouthpiece, is ideal. Breathing equipment will not be needed at all times and the mouthpiece can hang around the diver's neck, ready for instant use. An air supply is needed by the skindiver only until the smoke clears, or to enable him to submerge and swim to safety.

There is some danger connected to this type of operation. But danger is inherent to all fire fighting. Skindivers are firmly convinced that they will be safer attacking a fire while in the water than they would be on the land. Their bodies are submerged in cool water and relief from extreme heat can be secured by the simple expedient of ducking their heads. They may be endangered by falling objects and other hazards common to all types of fire fighting. These can be minimized by common-sense precautions. Even cold water is no obstacle to divers equipped with modern foam rubber cold water suits. Skindivers equipped with these suits can work comfortably in ice water and can operate effectively in all kinds of weather throughout the year. In addition to insulating the diver from extreme cold, these suits also protect his body from cuts and abrasions from the rough surfaces of underpinning and piling. In cases where extreme conditions of heat and flame are present, the diver may escape by swimming a short distance under water.

Perhaps the greatest hazard will stem from the operation of fireboats. Heavy streams directed at divers operating under a dock could cause serious injuries. However, this is a matter of coordination which is necessary at any large emergency and must be considered in advance.

It is expected these obstacles will be eliminated in the evolution of the program. In the meantime, skindiving teams of the Los Angeles Fire Department are trying to locate an abandoned pier or dock and the necessary permission to burn it. After all, the real value of fire fighting frogmen can be proved only under actual fire conditions. □□

COMPULSIVE FIRE-SETTERS

Continued from page 549

They also told how she had reported a recent fire and had, in fact, called the department after she had extinguished a fire in her own home. Inasmuch as this was a woman, and women pyromaniacs are quite rare, according to statistics, she was not the first on the list of suspects.

While the lieutenants were methodically checking their suspects and were about to look for this woman to question her, an anonymous telephone informer gave some information to the Alameda Police Department, describing a woman with an arson record. The description fitted the suspect. With police cooperation she was soon in custody. Under careful questioning she confessed setting both church fires and the others described.

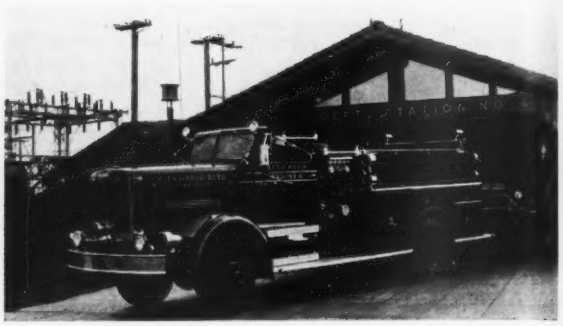
The second church was in the same block as the woman's home. She said she did not like the church and the organ music bothered her. She had tried to set it on fire and failed until she bought a pint of gasoline, ostensibly to be used for cleaning bicycle parts, and used it to ignite the outer wall of the church. This accelerant incidentally was entirely consumed by the fire and did not show in laboratory tests.

The fire department had her confession, which in California is not

Continued on page 556

New apparatus introductions

Niantic, Conn., Fire Department has acquired this forest fire and rescue unit built by Reading Body Works, Inc., Reading, Pa., on a Dodge Power Wagon chassis. It employs unitized welded-steel construction with reinforcement at critical stress points for rugged terrain usage



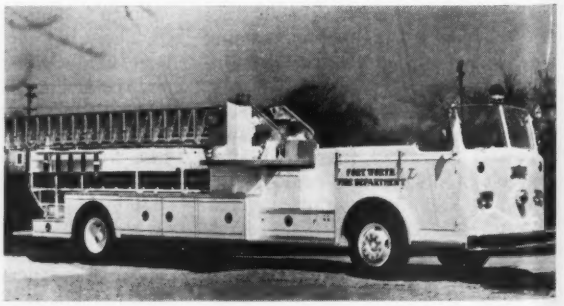
P. E. Van Pelt Co., Oakdale, Calif., recently delivered this 1,250-gpm pumper to Palo Alto Fire Department. Built on a four-wheel-drive Oshkosh chassis with a Hall-Scott 1091 engine, it is equipped with a 200-gpm auxiliary pump and air brakes, and should climb a 45 per cent grade at more than 5 mph

Baltimore recently placed this 85-foot Snorkel in service as Water Tower 1. Built by Mobile Aerial Towers, Inc., Fort Wayne, Ind., it is mounted on an International Harvester Co. chassis powered by a 230-hp, V-8 engine—Baltimore F. D. photo

LaFrance Fire Engine and Foamite Limited, Toronto, Canada, recently demonstrated its new telescopic hydraulic boom aerial lift to Ontario fire chiefs. Said to be available in extension heights up to 100 feet, 3-inch steel tubing conducts water from pump to a deck gun on aluminum platform

—Photo by Richard Mathews

Chief Leonard Dreier, North Tonawanda, N. Y., Fire Department points out contrast between original Hydrant Hose Company cart and new Ward LaFrance pumper recently placed in service. The semi-cab-forward Ward is rated at 1,000 gpm and powered by a 285-hp Waukesha engine—Photo by Bert Olson



Peter Pirsch & Sons Co., Kenosha, Wis., recently completed this intermediate aerial truck for the Fort Worth, Tex., Fire Department. The semi-cab-forward style features Pirsch aluminum alloy, lattice, solid "T" rail construction

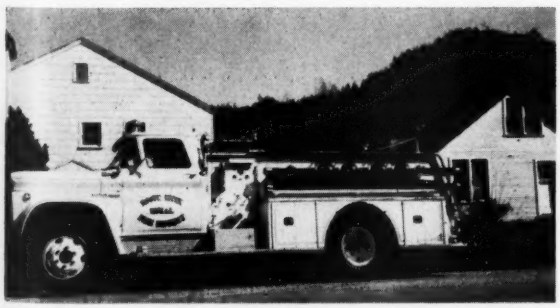
and deliveries

The Saanich, B. C., Fire Department recently added this Centurion five-man cab pumper on FWD chassis to its roster. Powered by a 285-hp Waukesha engine, it mounts an American Marsh 850 igpm pump—*Victoria Times photo by Irving Strickland*

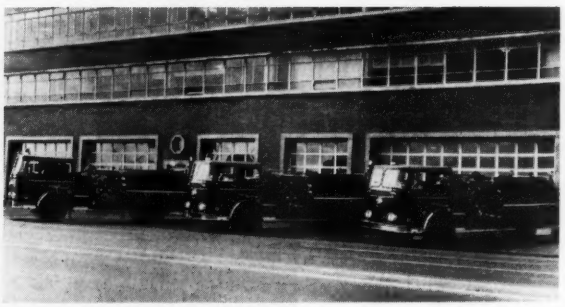
Lancashire County, U. K., Fire Brigade recently received delivery of this 100-foot Merryweather hydraulic turntable ladder, the first of four on order. Mounted on a Bedford chassis, it includes a transistorized telephone system for intercommunication between turntable operator and ladderman

New Orleans, La., Fire Department recently received these 85-foot American LaFrance aerial trucks. All carry 235 feet of ground ladders and are fitted with 200-gpm pumps and 250-gallon booster tanks—*N. O. F. D. photo by T. J. Picone, Jr.*

Well-equipped Rescue Squad 1, now in service with the Berkely, Calif., Fire Department, was built to specifications on a tilt-cab chassis. It features syncro-mesh transmission, Westinghouse air brakes and automatic Berg emergency brake. It is powered by a 215-hp engine



Rogue River Rural Fire Protection District, Ore., recently received this new unit built by Coast Apparatus, Inc., on a GMC chassis. Powered by a GMC 165-hp, V-6 engine, it mounts a Waterous P.T.O. 2-stage pump which is rated at 350 gpm at 120 psi or 70 gpm at 600 psi and an 800-gallon booster tank



The Portland, Ore., Fire Department recently took delivery of three more Seagrave, cab-forward, 750-gpm pumpers powered by Hall-Scott engines. The engines are equipped with P.T.O. booster pumps, and they also feature no-spin differentials, electric sanders and Bendix power steering

Lieutenant Roy Wormell and Fireman Jack Weingand were men most seriously injured in backdraft. Open and closed method of burn treatment was employed on both men

All official San Francisco F. D. photos by Chet Born

Squadmen replenish breathing apparatus air supply at fire scene from air tank manifold on Service Squad 1

Backdraft injures

Chief William F. Murray confers with some officers during the six-hour battle to control the fire. Seventeen engine companies, four hose tenders, six trucks, three salvage, two rescue and one special service squad operated at the San Francisco blaze on February 11

Roof ventilation indicates the volume and density of the smoke contained within the building at the outset of the fire. Cause is still under investigation

San Francisco fire fighters at four-alarm blaze

From a report by Assistant Chief Henry A. Lindecker, Director of Training, San Francisco Fire Department

A SMOKE EXPLOSION on two upper floors of a three and four-story building on February 11, injured five members of San Francisco Rescue Squads 1 and 2 who were performing ventilation operations. Fortunately all men were wearing masks and while severely burned on exposed skin, the vital front-face area was protected from the searing flames.

Box 3536 was received at 12:42 p.m. for a fire at 1306 Fillmore Street. At 12:45 p.m. a second alarm was sounded and two minutes later a third was ordered. A fourth alarm was struck at 12:58 p.m.

First-arriving companies reported the fire had reached an advanced stage with heavy concentrations of heat, smoke and flame. Delayed alarm was immediately indicated although this mystified the fire fighters, due to the hour and the fact that the closest fire station is only two blocks distant.

Squads 1 and 2 immediately began ventilation on the upper floors as lines were brought to bear on the main body of the fire and exposure protection lines were in place. Lieutenant R. Wormell and Squadman J. Weingand, Rescue 2, were on the top floor and had entered a room at the southeast end of the building. The smoke was extremely dense down to the floor level, but the expected accompanying heat condition was noticeably nonexistent. Feeling along the walls for heat and to locate a window, they noticed large volumes of smoke emitting from the crevices of the baseboards and around the casings of a door. At this point, there was a rumbling noise followed by a loud explosion that threw both men against the wall. Almost simultaneously, the room became completely involved in flame.

The explosion forced the door closed and Lieutenant Wormell had difficulty turning the knob because the skin on his hands was hanging in shreds and he was in intense pain. He heard a crash of glass and turned in time to see a pair of legs disappear out the window. This later proved to be Squadman Weingand making a headlong dive through the window to land on the fire escape balcony. Lieutenant Wormell dashed to the window to escape but was momentarily deterred when his mask became entangled in a portion of the window sash or casing; Weingand assisted him out. Both report that to the best of their knowledge the room was fully involved in flame during the course of escape.

Captain H. Drendel and Squadmen R. Wilson and A. Consani, members of Rescue Squad No. 1, were entering the fourth floor hallway by way of an open stairwell when they encountered a mass of flame in the hallway. They escaped by retreating down the stairway.

From the reports and a review of the building after the fire, the consensus of opinion seems to be that a combination backdraft and downdraft occurred. It is further considered that despite all efforts to effect roof and top-floor ventilation, the build-up of smoke and associated carbon monoxide was faster than the ventilating processes could be accomplished. This, together with the influx of air, produced an ideal explosive condition.

Of considerable importance was the black color of the smoke emitting from the roof and top floor, which definitely indicated a high carbon content.

Lieutenant Wormell and Squadman Weingand received very serious burns requiring skin grafting. Captain Drendel, Squadman Wilson and Squadman Consani have been released from the hospital but complete recovery will be slow as their hands were severely burned. All men were wearing masks and this protected them from flame-searing of the respiratory passages. All received burns of the arms, legs and particularly, the hands. Undoubtedly good equipment, coupled with sound operating practices, saved their lives. □□

COMPULSIVE FIRE-SETTERS

Continued from page 551

enough to convict, and her husband agreed to sign a petition to have her committed to a suitable institution under the state's Section 5050 of the Welfare and Institutions Code. The police department also had prepared a formal charge of arson under Section 448A of the Penal Code just in case, but this would have been hard to prove in court even with a confession.

Case not reported

The fire department took some pains to discover how responsible people could know of this walking, bicycle-riding fire hazard and not mention it. The doctors said, in effect, that relations between themselves and any patient were privileged and that, besides, questioning by police and fire officials would upset this patient, would retard her treatment and would undo what progress she had made.

The case worker apparently did not realize what an important revelation she had encountered in the half-guilty statement by the woman that she "didn't know" whether she had started the church fire or not. The case worker was apparently unable to rid herself of the misconception that this woman was sick and harmless and that she should be kept from harrassment by officials.

Just what was this harmless woman's history? So far as could be discovered, because these records are confidential, she had been previously given an injection of Pentothal Sodium by doctors while in another country. Under the influence of the "truth serum," as it is sometimes called, she admitted setting fire to a school and, as her husband was able to tell us, "cleared up a lot of other fires."

She returned to the United States and committed herself to a sanatorium and remained there during the latter part of 1960. So little did the sanitorium authorities fear predilections for fire setting, however, that they allowed her to come home to Alameda on week ends.

Finally, her history shows, she tired of the sanitorium and left it. Inasmuch as she was self-committed, the authorities were unable to prevent her from leaving, although there was no evidence mentioned that she was cured.

As a matter of policy to protect persons who have "paid their debt to society" and are released or paroled after conviction for the crime of arson, police and fire departments are not notified of such release. This obtains also in cases of psychopathically motivated pyromania. The reason for this, as far as the fire department has been able to determine, is that the doctors who are treating, or have treated such a patient, do not want this patient upset by the kind of questioning or close surveillance which police or fire officials would give them.

It is the parole board's way of eliminating "harrassment" of persons who are freed and are being reoriented to a more wholesome life. But the parole board's side of the policy is not backed up by law and the doctors' side of the policy carries the implication that fire officials cannot understand that a "sick" person does not deserve to be punished.

Understanding necessary

Firemen are not without understanding. They can say, as well as any psychiatrist, that this woman is guiltless before God. After all, was it not nature that shaped her mind?

No, she does not deserve punishment. But like those who carry the plague, she must be quarantined. If the law which seeks her out, apprehends her, questions her and incarcerates her, makes her sicker in the process, then the doctors should act together with the rest of the people who understand, to change that law.

The writer strongly recommends that the fire service tackle this policy in regard to arsonists. This is too intelligent a nation to have to suffer yearly the appalling destruction such people as Mrs. X bring upon us. Enlist the support of intelligent people, parole boards and the doctors, and analyze the problem thoroughly. National legislation should make it mandatory to report such pyromaniacs.

In the meantime, not to report the presence of a compulsive fire-setter in a community is inexcusable. □□

ARSON INVESTIGATION

Continued from page 548

and take a signed statement from them regarding their observations both during the fighting of the fire and after it has been extinguished. There is certainly no objection whatsoever to firemen and fire chiefs making use of their observations at the fire scene for possible use at a future time during the arson investigation. This is particularly recommended when fire is of unknown origin or suspicious circumstances.

Some of the things which the inspecting party will be looking for are: Multiple fires, evidence of incendiary devices or preparations for the fire, and unusual burning. The courts usually hold that separate, unrelated simultaneous fires are prima facie evidence of fires of incendiary origin. Therefore, any indication of fires in separate rooms, on separate floors, or in different locations should be noted.

Any evidence of incendiary devices or preparation for the fire should be noted. Among these would be containers for flammable liquids, ventilation by the arsonist prior to the fire, windows obstructed or covered over from the inside, trailers or other devices used to spread the fire from one location to another, an alarm clock with one hand, a candle, broken or damaged sprinklers, or fire doors tied, chained or otherwise rendered inoperative to permit the fire to spread from one portion of the building to another.

Missing business machines or personal items; any indication that contents have been removed from the building before the fire: doors of closets, cabinets or files left open so fire can destroy records; "Rube Goldberg" contraptions; or all gas jets turned on, would indicate "unusual burning."

Expert testimony

There is considerable law and decisions regarding the testimony of firemen as "experts" and with regard to their testimony establishing the corpus delicti in an incendiary fire. Arson investigators generally accept the definition of experts once rendered by a Kentucky court: "Experts acquire knowledge through actual experience by their study of certain subjects. They, in that manner, qualify themselves to give opinions on certain subjects on which they have special knowledge, and it is competent for them to do so within limitations."

Based on this decision, any fire chief or any fireman of competent experience can qualify as an expert with regard to the corpus delicti of the incendiary fire. Thus, an experienced fireman can, through proper testimony, properly presented, convey his opinions to a jury with regard to the fire cause or the absence of so-called "natural" or accidental fire causes, thus establishing the incendiary origin of the fire through the negative process, or via the examination of other possible causes.

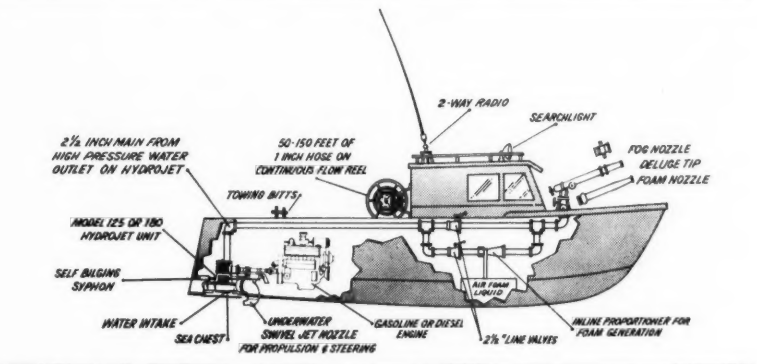
By being alert and observant before, during and after fighting a fire—and by recording his observations for future questioning, either by the arson investigator or on the witness stand—the fire fighter can help greatly in the apprehension and conviction of arsonists. Ultimately, the result should be a lessening of this crime. □□

What's new . . . among the manufacturers

products . processes . personalities

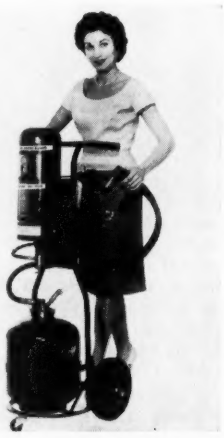
New Homelite Products

Homelite, 70 Riverdale Avenue, Port Chester, N. Y., has announced the addition of what is said to be an economy-priced series of 4-cycle engine-driven portable pumps and generators to its standard line of 2-cycle engine-driven equipment. The pumps are available in 1½-inch, 2½-inch and 3-inch models powered by Briggs and Stratton engines. Portable generators are rated at 1,500, 3,000 and 5,000 watts, powered by either Wisconsin or Clinton engines. All available with either gasoline or LP gas engines.



New Hydrojet Shallow-Draft Auxiliary Fireboat

Hydrojet Marine Corp., 1501 Euclid Avenue, Cleveland 15, Ohio, is developing shallow-draft auxiliary fireboats powered and steered by water jet, under license from Hanley Hydrojet, Inc., holder of the basic patents. The craft will range from 18 to 30 feet in length and be capable of speeds to 30 mph. Powered by either gasoline or diesel engines, the boats will have pumping discharge capacities of from 600 gpm to 1,200 gpm.



Fog Extinguisher

Alan Jacobs, 408 South Spring Street, Los Angeles 13, Calif., is now manufacturing a water fog extinguisher, Model WF-1 Tru-Fog Fire Ball, designed for industrial-type installations. A 10-pound cylinder of carbon dioxide at 900 psi is employed to expel 6 gallons of water containing a wetting agent at pressures up to 55 psi. Effective range is said to be up to about 30 feet and discharge time approximately 40 seconds.

Falcon Maintains Production

Falcon Alarm Co., Inc., 243 Broad Street, Summit, N. J., has announced that shipment and production schedules are being maintained with delays of only a day or two at most, following smoke and water damage from a fire on May 14. The blaze broke out in a refrigeration and air conditioner shop occupying a portion of the ground floor in the Falcon plant.

New RCA Facility

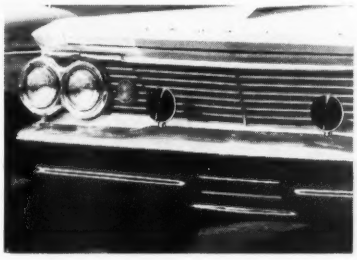
Radio Corporation of America has begun occupancy of its new Telecommunication Center in Meadow Lands, Pa., with the transfer of a headquarters organization from leased facilities in nearby Canonsburg. Located on a 50-acre tract, the center will become the new home of the Communications Products Department, headed by Frank P. Barnes as manager.

Corporation to Change Name

Food Machinery and Chemical Corp., San Jose 6, Calif., will change its name to FMC Corporation on July 1. Approved by stockholders at the company's recent annual meeting, the change has been made to reflect the broad diversification of the corporation in industrial and agricultural machinery, basic chemicals and defense materiel.

Aerial Intercom

Fi-Tronics Engineering, Inc., Wayne, Pa., is marketing its "Towercom," an aerial ladder intercommunication system connecting the tip of the fly ladder with the ladder turntable. Features are said to include: No controls at top of ladder and man at tip of fly always has communication with operator; low power drain; and simple operation.



Warning Flasher Kit

The Griffin Lamp Company, Shelby, Miss., is offering a twin-flasher warning lamp system in kit form, said to be prewired and ready for mounting on front bumper flange.

The kit contains two individual 5-inch red or amber lens, high-power polished chrome lamps and flasher unit wired in circuit with hook-up leads. An illuminated on-off indicator switch is provided for the instrument panel and the kit contains all needed hardware for mounting. Each lamp requires drilling a ½-inch mounting hole.

Aerosol Burn Spray

Medical Supply Co., Rockford, Ill., is distributing Americaine topical anesthetic in ¾-ounce spraytainers. The burn spray is available in a double-unit package which fits into a standard-unit system kit.

Continued on page 560

False alarms

Impatient Youth

Before boarding the train, the little city lad had been cautioned by his mother that if the conductor asked his age, he was to say he was only five.

"You're a big boy for five," said the conductor. "How soon will you be six?"

Replied the youngster, "Just as soon as I get off this train."

Rookie: "What'll you have to drink honey?"

Thirsty lass: "I guess I'll have champagne."

Rookie: "Guess again!"

You can't judge power by size. Sometimes the tiniest thumb has a man under it.

Kinkchaser: "Doc, when I walk down the stairs to the cellar, I feel o.k. How come when I walk back upstairs, I feel dizzy?"

Department Medic: "What do you keep in the cellar?"

A hug is energy gone to waist.

Ontario Fire Fighters Quarterly

The Old Timer was staggering home one evening when he passed a department store window. He bowed from the waist and tipped his cap to the display models.

A passer-by laughed and called to him, "Hey, you're drunk. Don't you know they are not real. They're dummies."

The Old Timer straightened up haughtily and replied: "They couldn't be too dumb. They're all wearing mink coats."

"Could I try on that red dress in the window?"

"There's no need to do that," the saleslady answered, "We have several fitting rooms."

Pointed Logic

"Why is it," stormed the irate battalion chief, "that I never get what I ask for in this company?"

"Perhaps, sir," answered the fed-up captain, "It's because we are too polite."

Have you ever noticed how unimportant your job is to your boss when you are asking for a raise and how important it can be to him when you want a day off?

"Definite nausea and fatigue from smoke inhalation. Your engineer has been working too close to that kerosene lantern."

Ironic Fate

Many a man works hard to keep the wolf from his door. Then his daughter grows up and brings one right into the house.

Two politicians were discussing tricks of the trade. One remarked his method of obtaining votes was to give all taxi drivers big tips and then tell them: "Vote Republican."

"I think my way is better," remarked the other, "I give no tip and tell them 'Vote Democratic.'"

Though a fifth will go into three with none left over, there may be one to carry.

St. Paul Fire Fighter

Apartment house repairman: "I understand you have something here that doesn't work."

Fed-up housewife: "Yes sir, there he is —stretched out on the couch!"

Many accidents are caused by the driver hugging the wrong curve.

Harlan P. Clappervalve of the McCarthysville, Calif., Volunteer Fire Department, recently visited Germany to study the fire fighting tactics of that country. His findings have been very enlightening. During his stay, the only difficulty which he encountered was the language barrier. For those who intend taking the trip, it would do well to contact Mr. Clappervalve who has compiled a glossary of fire fighting terms and translations. The following are a few excerpts from his book:

Captain: **Ein loudenvoicer**

Battalion Chief: **Ein loudenvoicer mit no talkenbaker**

Assistant Chief: **Gitoudenvay loudenvoicer mit no talkenbaker und stayoudenvay**

Chief: **Das fireundschpittinloudenvoicer**

Apparatus: **Das foodenmachiner**

Pumper: **Das pushinvatermithosinbek**

Hose wagon: **Hosinbekmitnopushinvater**

Ladder truck: **Oopendowner**

Suction: **Schpickithookenuper**

Alarm: **Readindasbox und schtompinfeet und mapenlookinater mit hopinbaker ja avayvego**

Turnouts: **Schveastinclos**

Helmet: **Gehitonheadermitnogethurten**

Axe: **Chopinvooder**

Nozzle: **Ein vaterpointinting mit krankenturn shutenoffer**

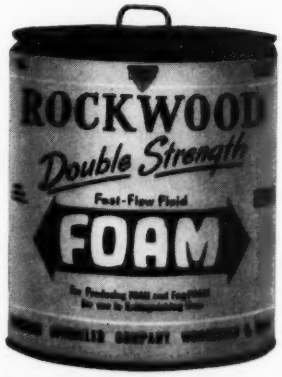
Pike Pole: **Pokinschticker**

Collapsible Ladder: **Vatchoudfingergedpinchen**

Al Noseworthy
San Jose, Calif. Fire Department

99.7%

of Rockwood FOAM protection is FREE!



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Engineers Water *. . . to Cut Fire Losses*

FOR FIRE FIGHTING purposes Rockwood Double Strength FOAM is inexpensive and completely effective. 3 parts *Rockwood Foam Liquid, plus 97 parts free water, plus 900 parts free air give you a fast low-cost fire extinguishing agent for only 1½ cents a gallon!*

Rockwood Double Strength FOAM puts out fires fast . . . reduces your storage costs . . . reduces shipping costs too! If you're using other types of special hazard fire extinguishing agents — you may not be using the most economical or most effective agent! We'll show you how to save on training cost and on fire fighting costs — and to fight fires better! Send in the coupon below. Tested and listed by Underwriters' Laboratories, Inc. Distributors in all principal cities.

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441 Harlow Street, Worcester 5, Massachusetts

Please send me complete information on Rockwood fire-fighting products.

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Title.....
Company.....
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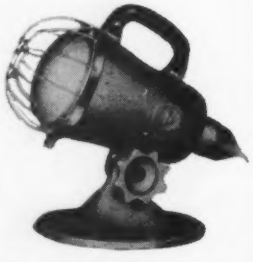
City.....*Zone*....*State*.....

Now any patrol or emergency vehicle can have a high power flood light direct from the 12V car battery supply.—No special generator or attachments needed, light cable can be clipped direct to battery terminals or a permanent pig tail twist lock connector may be installed. The new 12 volt Flood delivers 300 watts of light. Incorporating all the plus features of the Circle-D standard volt portables, lamp is supported against shock, cannot vibrate loose, heavy gauge wire guard face protection. Lamp housing is waterproof and corrosion resistant cast aluminum, exposed hardware aluminum or stainless steel. Extension cable enters housing through watertight gland.

STANDARD VOLT PORTABLES

FROM 200 WATTS TO 1500 WATTS



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CIRCLE-D-LIGHTS

NATALE MACHINE & TOOL CO. 339 13th ST. CARLSTADT, N. J.

MANUFACTURERS' NEWS

Continued from page 557

Appointments and Promotions

F. S. Wittenauer has been promoted to assistant general sales manager, Republic Rubber Division of Lee Rubber & Tire Corporation. He was formerly chief accountant of the division.

Motorola Communications and Electronics, Inc., has announced three promotions within its Pacific Northwest sales organization. **Joseph V. Guido** has been named regional sales manager in the Pacific Northwest. Succeeding him as account executive in Washington and Oregon is **S. Edward Williams.** Moving into William's former position as Seattle zone sales manager is **Robert H. Maki.** Guido's headquarters are in Portland, while Williams and Maki are located in Bellevue, Wash.

Truman Young has been named director, advertising and public relations, Walter Kidde & Company, Inc., Belleville, N. J. He will be responsible for the coordination of the promotional programs

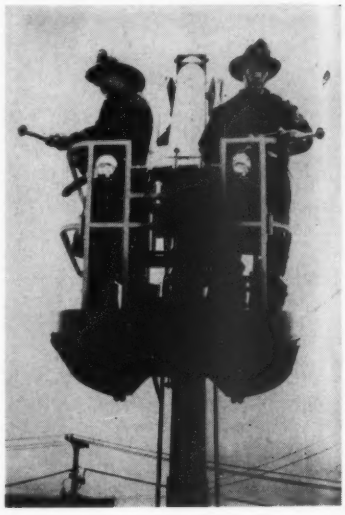
for all divisions of the company in the fields of aero-space, electronics, industrial, marine, international, ultrasonic and detection alarms and for its Canadian subsidiary. He has served as manager of market development, Industrial and Marine Division, and advertising and sales promotion manager.

Arnold J. Ryden, president of Midwest Technical Development Corporation, and **James K. Nunan,** president of Electra Scientific Corporation, have been elected to the board of directors of Midwestern Instruments, Inc., Tulsa, Okla.

Edward J. Cross has been appointed sales manager of the eastern sales division of Ardmore Products, Northbrook, Ill. He will be responsible for sales direction in the eastern part of the United States and will have his headquarters at the company's Linden, N. J., offices.

Spicer 6000 Transmission

Dana Corporation, Toledo 1, Ohio, has announced its Spicer 6000 series transmission case said to feature an eight-bolt P.T.O. aperture to accommodate high-torque, side-mounted P.T.O. installations on vehicles in the 50,000-pound GVW range. The unit is claimed to permit use of P.T.O.'s with ratings of 500 foot-pounds torque or 95 hp at 1,000-rpm output shaft speed, for intermittent service. A standard six-bolt P.T.O. aperture is also provided on the opposite side of the case.



Seagrave Aerial Platform

Seagrave Corporation, Columbus, Ohio, has announced availability of its Seagrave-Cemco "Eagle" 65 or 85-foot aerial platform. The aerial unit is built by Cemco Industries Inc., Galion, Ohio, and will be mounted exclusively by Seagrave on custom and suitable commercial chassis.

Employing jointed tubular extruded booms of tensile steel, the unit is said to have 360-degree rotation, automatic platform leveling, overriding ground controls and all controls of the "deadman" type. A 4-inch water supply line and conduit for electrical and communication systems are included within the tapered booms.

Pro Rescue Lung

Rose Aviation, Inc., Pro-Lung Division, Aurora, Ohio, is marketing a convertible breathing apparatus which is claimed to be useful for both underwater and atmospheric applications. Primarily an underwater (SCUBA) unit, it is said to convert quickly to a full-face mask and self-contained regulator for use in hazardous atmospheres. □□

Among the buffs

By Paul Ditzel

IT'S SPRINGTIME here in Smog Wilderness, and on a clear day you can almost see the daffodils through the haze from the latest brush fire. All seems right with the world: I've got a new job, a new secretary (who is already complaining about my new pipe tobacco) and new news from buffs. The news indicates that along with the daffodils, the silly season is upon us.

Item One: Coney Island buffs turned out hell bent for a hatbox when Box 3557 tapped in. The location was ripe in more ways than one. Aside from the congested value, first-arriving buffs backed off quickly and reached for breathing apparatus. The fire was in a stuffed whale on an open trailer. The fish fry was slight, if not the size of the story.

Item Two: Members of Los Angeles' Box 15 Club who turned out to a working fire in the Los Angeles *Times* Building had lots of company and lots to see.

While the local blazebeaters were confining the flames to the inside of ducts used to carry fumes from stereotype casting machines, an automobile started to burn a few feet from one of the pumpers. Out came another hose. And while Battalion Chief M. B. Carter was trying to make up his mind which report to write first, he had more problems. A lady driver (what else?) sideswiped one of the rigs.

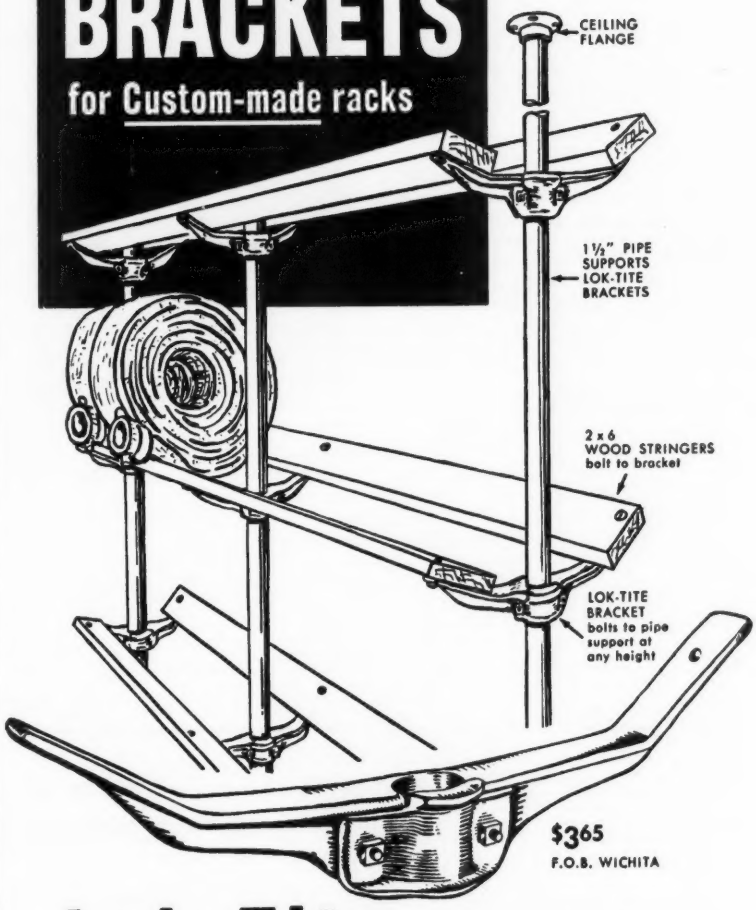
Box 15'ers sympathized all the more with Chief Carter when they spotted among the sidewalk superintendents none other than Fire Chief William L. Miller who happened to be eating lunch nearby and Former Fire Chief John Alderson who was passing by and stopped to reminisce. Somehow matters got straightened out and the fire department returned to normal in a few days.

Item Three: In San Francisco, the Fireboat Phoenix pulled away from its berth and was chugging along when an 11-year-old fire buff (rumor has it that he was one of Doc Levin's offspring) decided to give chase on his bicycle. The young buff followed the fireboat not wisely but well. He rode his bicycle smack off the end of the pier and landed, splash, in San Francisco Bay.

Item Four: St. Louis fire buffs had never seen a car blazing like the one that greeted first-arriving firemen. Hose lines were laid, lines were charged, nozzles were opened. Streams jabbed at the parked car. But for some reason the fire refused to go out. Further investigation showed that the car was parked over a steaming manhole.

Down in Huntsville, Ala., is a buff we'd like to have you know. At 3, he's

HOSE
BRACKETS
for Custom-made racks


CEILING FLANGE
1½" PIPE SUPPORTS LOK-TITE BRACKETS
2 x 6 WOOD STRINGERS bolt to bracket
LOK-TITE BRACKET bolts to pipe support at any height
$365
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Convert waste space to valuable storage

LOK-TITE brackets are ideal for odd dimension areas where ready-made storage will not fit. LOK-TITE brackets encourage good housekeeping . . . assures easy hose inspection and correct ventilation. LOK-TITE brackets are approved by fire hose manufacturers and fire departments everywhere.

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Please send me_____brackets @ $3.65.

NAME_____

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- Simple to install
- Easy to adjust
- Big load support

probably the youngest fire buff in the United States. But his age is no measurement of the interest he has in the fire service. The story of Gerry Higgins is best told by officers and members of a fire department far above the Mason-Dixon Line.

Not long ago, Gerry and his parents visited the village fire department in Larchmont, N. Y., where they were greeted by Captain Patrick J. Fitzgibbons, a veteran of more than 35 years. The three-year-old is a victim of eye cancer and is totally blind. Captain Fitzgibbons showed Gerry and his sister all the compartments and let them try on hats and sit and stand on the rigs. Gerry's vision of the apparatus was transmitted through his ability to feel the apparatus, and what Captain Fitzgibbons told him. The visit ended when the apparatus turned out to an alarm.

In a subsequent letter to Chief Duncan MacPhail, the boy's mother told of Gerry's continuing interest in the fire service and of the memory he had of the kindness shown him by Captain Fitzgibbons, a kindness, of course, that is traditional among fire departments everywhere. Chief MacPhail then issued an "Official Order" making Gerry "Honorary Chief" of the Larchmont Fire Department. He sent him the "Order" together with a white chief's helmet and a fire department badge. Arthur Dunn, Jr., of Hose Co. No. 2, local reporter for the Mamaroneck *Daily Times* also sent Gerry a badge. Mr. and Mrs. Higgins testify to Gerry's excitement. They sent the Larchmont firemen a photo of Gerry while he was wearing his helmet and badge.

Larchmont firemen under the present chief, Philip A. Peterson, have asked this column to request other fire chiefs, firemen, and buffs to send Gerry any fire department badges, buttons, or medals. Recording Secretary George C. Clarke of the Larchmont department, who sent us the information, says Gerry's address is 3700 Lakewood Road, N. W., Huntsville, Ala.

Those of you who found the recent article in FIRE ENGINEERING on the Chicago fire which took nine lives as interesting as I did, will want to read the current issue of *Man's Magazine* which carries a popularized version of what happened. If you can't find the magazine, write Editor Phil Hirsch, 444 Madison Avenue, New York 22, N. Y., and enclose 35 cents for your copy.

Until next month, please continue to send your club notes and news of individual buffs to me at 4234 Don Diablo Dr., Los Angeles 8, Calif. Regretfully, letters cannot be answered, other than through this column. □□

Fire-Bombing Arrest Made in Indiana

Charges have been filed against a 21-year-old Clay Township, Ind., man for the fire-bombing of a neighbor's home. Said to climax a long-standing feud between two families, Fred Schubert, Jr. was jailed after it was alleged he threw a "Molotov Cocktail" consisting of a vinegar bottle filled with what appeared to be gasoline through a kitchen window of the home.

Mrs. Virginia Mazura and her teen-age daughter were forced to flee the burning dwelling and escaped unhurt. Clay Township firemen quickly brought the flames under control with an estimated damage of $100. Sheriff William Locks said the young man was charged with illegal distribution of flammable materials.

DARLEY Champion . . . Building an Even Greater Reputation for STAMINA and DEPENDABILITY

W. S. Darley & Co., Chicago 12

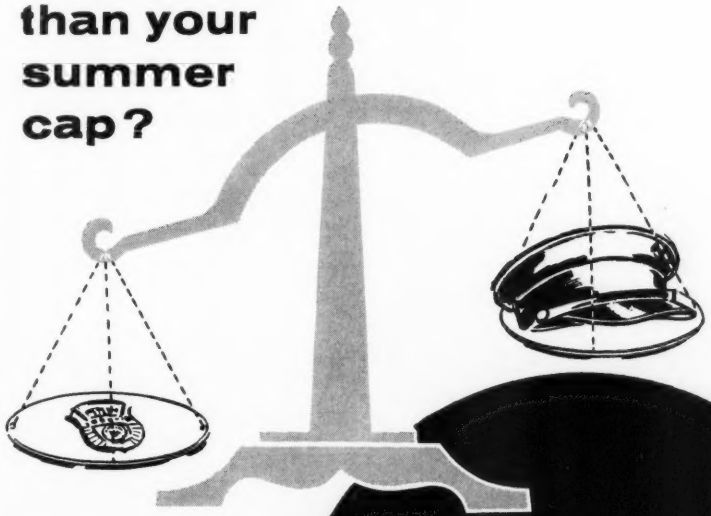
ESTABLISHED 1908

What's burning

The following list includes fires of $10,000 and over in the United States and Canada for the period from April 30th to May 29th.

Belmont, Cal.—Sem Paint Co. damaged. Explosion.
Brockway, Cal.—Brockway resort hotel damaged.
Concord, Cal.—Uptown market demaged.
Hollywood, Cal.—Twenty-four dwellings destroyed or damaged in Hollywood Hills section.
San Mateo, Cal.—West Coast Container Corp. damaged.
Bristol, Conn. — Tracy-Lilley Block housing United Shoe Hospital, Eterlees, ladies' clothing store, and Jon Marie Ladies' clothing store, damaged.
Darien, Conn.—Two-story dormitory at Cherry Lawn School destroyed.
Griswold, Conn.—Century-old "Old Stone Mill" destroyed.
Guilford, Conn.—Arnold Foundry Co. damaged.
East St. Louis, Ill.—Southern Railways freight depot and 15 motor trailers of Ben Gutman Truck Service Inc., damaged.
Galesburg, Ill.—Holcomb building housing The Kiddie Korner store and apartments, and adjacent Holcomb Studio, Badger Paint Store and Peerless Market, damaged.
Lawrenceville, Ill. — Nichols Funeral Home damaged.
Crown Point, Ind.—Grain elevator of Everett McMichael destroyed.
Fort Madison, Iowa—DuPont Co. building damaged. Explosion.
Rangeley, Me.—Ten camp buildings on Pleasant Island Cupsuptic Lake destroyed; cottage owned by Charles Fritz damaged.
Chapel Oaks, Md.—Fairmont Heights High School damaged. Safecrackers.
Easton, Md.—McKenny Willis & Son, Inc. grain elevator destroyed.
La Plata, Md.—Aqualand Roadhouse, 6 miles south, destroyed.
Whitemarsh, Md.—Arcadia Manufacturing Co. storm door plant destroyed.
Cambridge, Mass. — Storage building, office building and garage at Metropolitan Ice Co. destroyed.
Cambridge, Mass.—Rooming house at Ellery Street and Broadway destroyed.
Somerville, Mass.—Groisser and Shlager Iron Works damaged.
Watertown, Mass.—Waltran Terminal Co. storage building damaged.
Winchester, Mass.—Waterfield Building housing Strickland Restaurant, Bettie Donald Lingerie Shop, Bob's Barbershop, beauty salon, Butterworth Jewelry Store, Fabric Center, Albert Horn Piano Studio, Winchester Dental Laboratory, Waterfield Hall and offices, damaged.
Burr Oak, Mich.—Mills Chevrolet sales and service plant damaged.
Flint, Mich.—Long Lumber Co., on Corunna Rd., damaged.
Jackson, Mich.—Litemetal Diecast Inc. plant damaged. Ignited magnesium dust.
New Baltimore, Mich.—MacDonald Manufacturing Co. damaged.
Saginaw, Mich.—Norman Graf Paint Co., McGee Finlay sports goods store, and Tower Finance Corp. building damaged.
Duluth, Minn.—Elim Lutheran Church destroyed.
Minneapolis, Minn. — Morris Clothing Store damaged.
St. Louis, Mo.—Warehouse of Valley Farm Dairy damaged.
Columbia, N. H. — Barn, horses and cattle owned by Charles Wite, Jr., destroyed.
Atlantic City, N. J.—Atlantic Furniture Co. warehouse destroyed.
Fairlawn, N. J. — Plymouth Park Hardware Store destroyed; adjoining Plymouth Park

. . . does your present badge weigh more than your summer cap?



try New Hi-Light

the sensationally popular lightweight year-round badge

Hi-Light — the revolutionary new lightweight badge designed by Blackinton.

Hi-Light, originally developed for use on lightweight summer uniform caps has become extremely popular for year-round use.

A Hi-Light badge is ⅓ the weight of a conventional badge — so light you hardly know it's there.

Available in 3 gleaming finishes, brilliant polished Nickel, long-lasting Rhodium and rich, lustrous Gold Plate. Notice the high quality, deep cut precision die work that has made Blackinton badges famous.

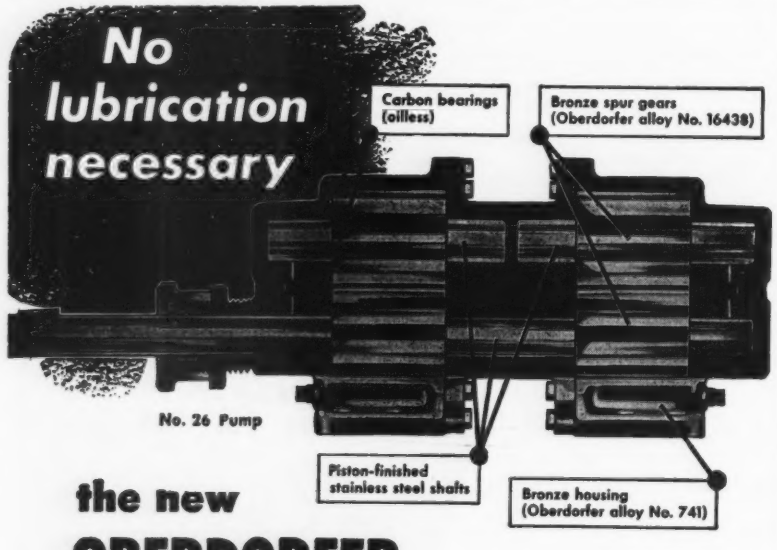
Look for the Blackinton Hi-Light trademark stamped on the back of every badge — this is your guarantee of the finest badges made from an entirely new feather-light metal.

Ask your equipment supplier or uniform manufacturer to show you the many different styles of Blackinton Hi-Light cap badges . . . sold throughout the world. We will gladly give you the name of a Blackinton badge dealer in your area, on request.

BLACKINTON

V. H. BLACKINTON & CO., INC. • ATTLEBORO FALLS, MASSACHUSETTS

Food Center and Plymouth Park Cleaners damaged.
Mountain Lakes, N. J.—Oaklee's Furniture Store destroyed.
South Bound Brook, N. J.—Canal Lumber Co. damaged. Suspected arson.
Clovis, N. M.—Silver Grill Restaurant and seven adjoining establishments damaged.
Eunice, N. M.—Columbia Carbon Co. plant, 5 miles south, damaged.
Barneveld, N. Y.—South Trenton Community Church destroyed. Defective wiring.
Binghamton, N. Y.—General Millwork Supply, Inc. plant and storage shed destroyed.
Delhi, N. Y.—Mill processing plant and storage building destroyed. Welder's torch exploded ammonia tanks.
Elmira, N. Y.—Restaurant and three concession stands in Eldredge Park amusement center destroyed. Defective wiring.
Gainesville, N. Y.—Barn on Ronald G. Eddy farm destroyed.
Rochester, N. Y.—Wegman Food Market warehouse damaged.
Roscoe, N. Y.—Fleetwood Maple Corp., bowling pin manufacturers, damaged.
Salamanca, N. Y.—Jamestown Table Co. plant damaged. Electric motor switch-off ignited paint fumes causing fire and heavy sprinkler leakage.
Durham, N. C.—West Durham Lumber Co. destroyed.
High Point, N. C.—Snider Printing Co. destroyed. Arson suspected.
Monroe, N. C.—Monroe Turkey Processing Co. damaged. Explosion.
Newton, N. C.—North State Furniture Co. destroyed.
Batavia, Ohio—Schott-Kimball Ford Agency destroyed; auto repair shop damaged.
Cleveland, Ohio—Uncle Bill's Discount Center, Brooklyn, destroyed.
Kent, Ohio—V. L. Smithers Manufacturing Co., mfr. of plastic used by florists, damaged. Short circuit.
Portland, Ore.—Barringer Bros. Meat Co.'s lockers destroyed.
Portland, Ore.—All Angels Episcopal Church destroyed.
Roseburg, Ore. — New Service Laundry destroyed.
Woodburn, Ore. — Boat building plant destroyed; Delaney's Sporting Goods Store damaged. Faulty wiring.
McKeesport, Pa.—Bowl-A-Drome bowling center damaged.
Mount Oliver, Pa.—Building housing Knoxville Shoe Repair Shop, Mike & Mary's Grill, two other business firms and three apartments, destroyed.
Oxford, Pa.—Barn of Marshall Buchanan on Lewisville road, destroyed.
Scranton, Pa.—Army Surplus Yard, Ashley By-pass road, destroyed.
Rock Hill, S. C.—Park Inn Grill damaged. Electric frying machine thermostat failed to operate.
Middlebury, Vt.—Battell Block housing Lockwood's Restaurant, A. C. Taber Paint Shop, other stores, offices and apartments, damaged.
Waterbury, Vt.—Five-barn complex on Bernard J. Keefe Sr. farm destroyed.
Pennington Gap, Va.—Cas Walker Virginia Center, shopping mart, destroyed.
Tacoma, Wash.—Gilbert's Moving & Storage warehouse destroyed.
Cudahy, Wis.—The Round-Up Inn damaged. Arson suspected.
Menasha, Wis. — Fire in apartment building caused damage to building housing the Independent TV store also the C&J Glass and Paint store and a Western Union office.
Milwaukee, Wis.—Two and one-half-story duplex damaged.
Port Washington, Wis.—Barn, baled hay and four heifers of Ben Blazel destroyed.
Sheboygan, Wis.—Pantzer Lumber Co.'s buildings and yard damaged, and one-half-million board feet of lumber destroyed. Arson suspected.
Buffalo, Wyo.—Vocational agriculture and shop building at Buffalo High School destroyed.
Toronto, Ont.—Crown Lumber Co. destroyed; dwellings of Harold Knoch, Samuel Hurley and John Brown damaged.
Windsor, Ont.—Fraser Box & Lumber Co. damaged. □□


No lubrication necessary
Carbon bearings (oilless)
Bronze spur gears (Oberdorfer alloy No. 16438)
No. 26 Pump
Piston-finished stainless steel shafts
Bronze housing (Oberdorfer alloy No. 741)

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OBERDORFER

BRONZE BOOSTER PUMPS

These booster pumps with oilless bearings will last 3 to 5 times longer than the old style equipped with plain bronze bearings. As a result of closer machining tolerances, over 20 feet of suction lift may be depended on.

The No. 13 and No. 26 Oberdorfer Pumps are more fool-proof than they have ever been. When you get to a fire you have something you can count on. It isn't necessary to wear pumps out checking them periodically to see if they will work. These pumps are metering pumps in principle and therefore must produce the same volume for every revolution of the drive shaft.

PERFORMANCE DATA—No. 26 and No. 13 PUMPS

Pump No.	Pump Shaft R.P.M.	Pounds Pressure	Hose Length and Size	Dry Suction Lift in Feet	Vol. in Gal. Per Minute
26	1600	120	500'—1½"	20'	150
13	1600	120	500'—1½"	20'	75

LIST PRICES — No. 26 — $249.50 No. 13 — $122.50

Slightly higher west of Rockies

FIRE PUMP DIVISION, Oberdorfer Foundries, Inc., Syracuse, N. Y.

Fire Fighter Dies In Training Accident

Wayne Shannon Stanturf, 36, an engineer with the Kern County, Calif., Fire Department at Maricopa, died April 6 at a Bakersfield, Calif., hospital of burns received when he was trapped in a fire during a training operation.

Stanturf was heard screaming for help in a burning house which he reportedly had entered without authorization or knowledge of training officers. It is believed he had gone into the kitchen to take photographs of the fire or of the men operating on the blaze with hose lines. Fellow firemen rushed him to the hospital with second and third-degree burns where he succumbed.

According to First Assistant Chief Bob Williams, Stanturf, a member of the department for 10 years and familiar with the training procedure, had received permission to take pictures of the operation for training purposes with the stipulation that he remain behind the instructor and hosemen who were to extinguish the fire.

The 50-year-old five-room house, donated to the fire department for training purposes, was being set afire in sections to simulate conditions encountered at home fires. The trainees, all members of the department from 18 months to three years, attended orientation sessions prior to the fire and were familiar with conditions of the operation. *Roi B. Woolley*

New Helmet Developed By California Department

After more than two years' research and development, the fire department of the industrial city of Vernon, Calif., has introduced a new fiberglass helmet. Adapted from crash helmets worn by racing drivers, the new headgear is designed for an all-time high in safety. According to Vernon Fire Chief Lester C. Husted, "Everything is designed to prevent injury."

Student Fireman J. R. Winfrey (left) wears new safety helmet while Fireman Don A. Melker wears conventional type. Men are equipped with identical breathing apparatus

Among the built-in safety features, Chief Husted said, are a polystyrene foam liner that distributes weight evenly and absorbs the pressure of head blows, a flip-up plastic face shield and rear deflector shield. The wearer is protected from blows from the side and rear as well as the top. In addition, the helmet may be used with all types of breathing equipment. The outer shell is made of multiple layers of reinforced fiberglass coated with highly reflective aluminum base plastic. In repeated tests at 128 foot pounds, impact on the wearer has proved negligible. Total weight is 39 ounces.

Chief Husted said his entire 110-man department is to be equipped with the new helmets during coming months. While costs will be slightly higher than for conventional styles, he said he feels the investment in safety far outweighs other considerations.

H. P. Levy

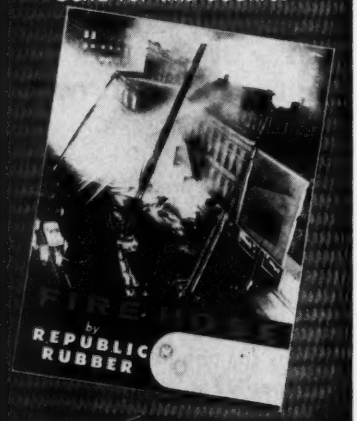
Aircraft Used on Forest Fires in Pennsylvania

An airplane was used for the first time in Schuylkill County, Pa., during April to fight three small forest fires under a new plan of the State Department of Forests and Waters. According to reports, the initial effort worked out very well. Five planes and two helicopters are being employed in Pennsylvania this year for fire fighting purposes.

Kenneth Snyder

FIRE HOSE ... BUY REPUBLIC

Send for this booklet



MUNICIPAL
(All Double Jacket)
Champion (K-101)
Flexfold (K-128)
Republic 600 (K-129, K-130)
Smoothtex-Six (K-103)
Smoothtex-Four (K-104)
Target (K-127)
Tower (K-102)

FIRE ENGINE SUCTION
Republic Hard Rubber (E-587)
Republic Soft Type (K)

UNDERWRITERS'
Dacro-Prene (K-19) Single J.
Dacro-Prene (K-20) Single J. Reprene Impregnated

FACTORY MUTUAL
Codaflex (K-21) Single J.
Flexcelo (H-10216) Single J.
Hydro (K-17) Single J.
Hydro (K-126) Double J.
Hydro (POH-14968) Single J. Rubber Cover
Hydro (POH-14969) Single J. Neoprene Cover

INDUSTRIAL
Aero (K-4) Single J.
Hector (K-5) Single J.

CHEMICAL
Excelo Booster (W-618)
Republic Braided (L-61)
Republic Wrapped (E-541)
Tower Wrapped (E-615)
Tower Braided (L-9)

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Coming events

July 10-12—Michigan State Fire Chiefs Association. Annual meeting, Muskegon, Mich. Secretary, Edward F. Klecka Jr., 1102 Ruddiman Avenue, North Muskegon, Mich.

July 13-15—Ohio Fire Chiefs Association. Annual meeting, Cincinnati, Ohio. For information, contact Chief Dan Vogel, Cincinnati Fire Department or W. H. Cheesman, Secretary, 309 Briarcliff Road, Dayton 15, Ohio.

July 17-18—Wisconsin State Fire Chiefs Association. Annual meeting, Berlin. For information write W. E. Clark, Supervisor, Fire Service Training, State Board of Vocational and Adult Education, 14 North Carroll Street, Madison 3.

July 20-22—Montana State Firemen's Association. Annual meeting, Kalispell. For information write C. J. Hathaway, Secretary, Local No. 547, International Association of Fire Fighters, Kalispell.

July 29—Egyptian Firefighters Association of Southern Illinois. Annual meeting, Salem. For information, write Orval Mahon, Chairman, 201 South Broadway, Salem.

Aug. 4-6—Indiana Firemen's Association. Annual meeting, Indianapolis. Advanced registration will be handled by Captain William Ball, Fire Headquarters, 301 East New York, Indianapolis.

Aug. 7-10—North Carolina State Firemen's Association. Annual meeting, Goldsboro, N. C. For information, write Chief Charles L. Burkett, Fire Department Headquarters, Salisbury, N. C.

Aug. 7-12—Virginia State Firemen's Association, Harrisonburg, Va. For information write, J. W. Willis, Chairman, c/o Harrisonburg Fire Department, Harrisonburg, Va.

Aug. 10—Milton Volunteer Fire Department Parade, Milton, Pa. For information contact Owen C. Ranck, Chairman, Parade Committee, Milton Fire Department, Milton, Pa.

Aug. 10-12—Milton Volunteer Fire Department Annual Festival and Parade, Milton, Pa. For information, write Owen C. Ranck, Secretary, Milton Fire Department.

Aug. 20-23 — Canadian Association of Fire Chiefs. Annual meeting, Kitchener, Ont. Secretary-Treasurer, Allan H. Clark, Chief of the Fire Department, Lakefield, Ont.

Aug. 27-29—New York State Permanent Firemen's Association. Annual meeting, Schroon Lake, N. Y. Secretary-Treasurer, Robert E. Mills, 420 Plymouth Drive, Syracuse 6, N. Y.

Sept. 14—Delaware Fire Chiefs Association. Annual meeting, Dover Fire Department, at 8 p.m. For information write, E. Reynolds Bradley, Smyrna, Dela.

Sept. 15-16—Delaware Volunteer Firemen's Association. Annual meeting, Dover. For information, write E. Reynolds Bradley, Secretary, Smyrna, Dela.

September 24—Fire Chiefs' Council of Suffolk County. Annual field conference, Firemanic Training Grounds, Yaphank, L. I., N. Y. For further information, contact Chief Harold Hochheiser, Secretary, 146 Ostrander Avenue, Riverhead, L. I., N. Y.

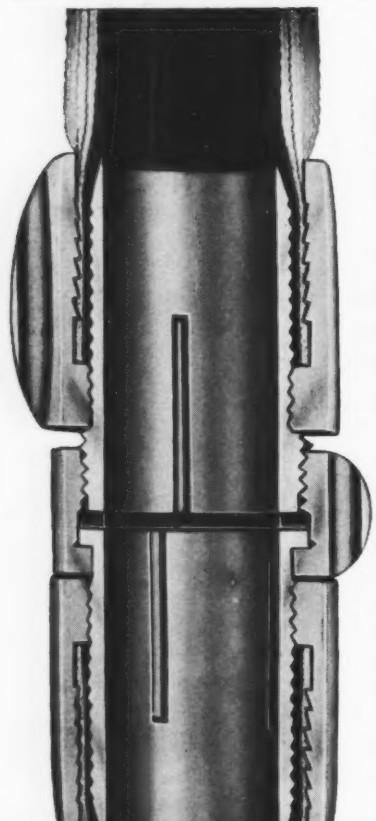
September 24—Great Lakes Association of Fire Chiefs. Annual meeting in connection with IAFC Conference, Las Vegas, Nev. Secretary-Treasurer, Willard G. Compton, Chief of the Fire Department, Springfield, Ohio.

September 25—Pacific Coast Inter-Mountain Association of Fire Chiefs. Annual meeting in conjunction with IAFC Conference, Las Vegas, Nev. Secretary-Treasurer, Stephen Edmondson, 1248 North Marengo Avenue, Pasadena, Cal.

September 25—Missouri Valley Association of Fire Chiefs—Annual meeting in conjunction with IAFC Conference, Las Vegas, Nev. Secretary-Treasurer, Chief Raymond G. Davis, Sedgwick County Fire Department, Wichita, Kans.

September 25-28—International Association of Fire Chiefs. Annual meeting, Las Vegas, Nev. Executive Director, B. Richter Townsend, 232 Madison Avenue, New York 16, N. Y.

Oct. 5-7—The Fireman's Association of the State of Pennsylvania. Annual meeting, Scranton, Pa. For information contact Arthur C. Potter, Secretary, P. O. Box 703, Lewistown, Pa. □□



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Maryland to Expand Fire Service Facility

The Fire Service Extension Department, University of Maryland, has announced a capital improvements program to increase the facilities of the department. Planned for the program is a 60 by 80-foot addition to the Fire Service Extension building, revision of existing classrooms in this building, erection of a new drill tower in the training area, addition to the structural fire fighting building and addition to the rescue training building. The training area will be graded and paved for all-weather operations and floodlights will permit night training classes. The Maryland Legislature has appropriated $200,000 for the work and this will be matched by an additional $150,000 on application from the Maryland Civil Defense Agency and the Office of Civil and Defense Mobilization.

U of M Fire Service Bulletin

Association news

Bush Re-elected by NFPA

Loren S. Bush, chief engineer, Pacific Fire Rating Bureau, San Francisco, was re-elected president of the National Fire Protection Association at the association's recent annual meeting in Detroit. Other officers re-elected include: First vice president—J. Sharp Queener, manager, Safety and Fire Protection Division, E. I. duPont de Nemours Co., Wilmington, Del.; second vice president—Warren J. Baker, chief engineer, Insurance Company of North America, Philadelphia, Pa.; secretary-treasurer—Hovey T. Freeman, president, Manufacturers Mutual Fire Insurance Co., Providence, R. I.

T. Seddon Duke, president, Star Sprinkler Corp., Philadelphia, Pa., was re-elected chairman, board of directors. John J. Ahern, director of security, General Motors Corp., Detroit, Mich.; and Chief Lewis A. Marshall, Providence, R. I., Fire Department, were named to the board of directors for three-year terms.

Graves Heads Missouri Fire Chiefs Association

Chief L. W. Graves of Sunrise Beach, was elected president of the Missouri Association of Fire Chiefs at their annual conference held in Jefferson City. He is also second vice president of the Missouri Valley Division, International Association of Fire Chiefs.

Other officers elected were George Smith, Raytown, first vice president; Walter Daehn, Cuba, second vice president; and Ken Stanton, North Kansas City, secretary-treasurer.

Baker Heads SFPE

Warren J. Baker, manager, Technical Department, Insurance Company of North America, Philadelphia, was elected president of the Society of Fire Protection Engineers during the section's recent meeting in Detroit in conjunction with the NFPA 65th annual conference. He succeeds James J. Duggan, director, Safety and Fire Protection, Union Carbide Chemicals Co., South Charleston, W. Va.

John N. Pryce, director, Fire Protection Engineering Department, Canadian Underwriters' Association, Montreal, P. Q., was elected first vice president and second vice president is J. E. Johnson, president, Viking Fire Protection Company, Kansas City, Kans. Robert S. Moulton was re-elected secretary-treasurer.

In addition to the officers, members of the executive committee include: Loren S. Bush, chief engineer, Pacific Fire Rating Bureau, San Francisco, who is also president of the NFPA, and Edwin N. Searl, assistant manager, Western Actuarial Bureau, Chicago, Ill. □□

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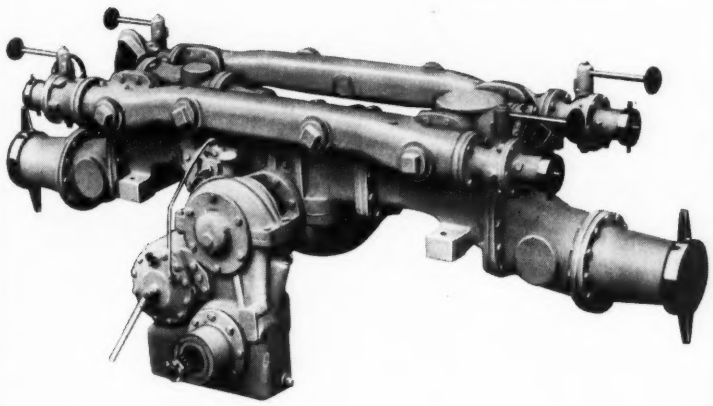

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Names in the news

Sweeney Named New Haven Administrative Assistant

Drillmaster Francis J. Sweeney, New Haven, Conn., Fire Department, was promoted to battalion chief on March 7 and named administrative assistant to Fire Chief Thomas Collins. Chief

Sweeney was appointed a fireman in August 1944, promoted to lieutenant in 1949, captain in 1954 and named drillmaster in 1957. He is a past president, Connecticut Drillmasters Association and chairman, Visual Aids Subcommittee, Special Projects Division, Fire Training Committee, NFPA.

Ontario Marshal Makes New Appointments

John Turnbull, former executive officer, Fire Service Division, has been appointed deputy fire marshal succeeding to the position vacated by Martin Hurst who was named fire marshal last fall. Marshal Turnbull served 12 years with the Toronto Fire Department before joining the fire marshal's staff as instructor. He was promoted to executive officer in 1957.

John J. Richards, for the past 11 years in the Fire Investigation Division and more recently assistant chief inspector, has been named chief, Administrative Services Division. He joined the staff after service with the Ontario Provincial Police.

Kenneth G. Wares has joined the staff as public relations officer, Public Information Division, succeeding John Corfe who has resigned to enter private business. His background is professional public relations.

Rene St. Pierre has joined the staff as an instructor. Fire Services Division. For the past 11 years he has been a member of the Timmins Fire Department.

Arthur D. Hope has joined the Fire Investigations Division. For 12 years he has been with the Ontario Provincial Police, the past four in the Criminal Investigation Division.

E. J. McGough has joined the staff as an instructor, Fire Services Division. He served 14 years with the Toronto Fire Department, the last five as an inspector, fire prevention bureau.

Tom Ryan to Retire

Battalion Chief Thomas D. Ryan, New York Fire Department, is presently on terminal leave pending his disability retirement in June. Author of many technical articles appearing in FIRE ENGINEERING and *WNYF*, he is a veteran of 22 years service and widely known for his fire protection research and teaching talents.

While serving as a captain he was supervising engineer in command of Supervising Engineer Company No. 1 and several attached special units. As part of his duties in this capacity, he responded to major alarms throughout the city to supervise placement, operation and usage

of all apparatus and equipment. He conducted training programs to indoctrinate all personnel on new apparatus and equipment and assisted in drawing up specifications for new apparatus and equipment. He also conducted apparatus acceptance and equipment evaluation tests, as well as investigating new developments in the fire protection field. In 1958 he was awarded the Administration Medal for setting up a major catastrophe mutual aid program between the fire department, large industrial organizations and city, state and Federal agencies.

Chief Ryan holds a Master of Arts degree in education from Fordham University and has long served as a staff instructor at the fire college and the probationary firemen's school. He reorganized and established a new curriculum in the motor and pump operators school and collaborated in the making of training films on driver education and use of equipment. In 1956 he served as guest instructor in driver training at the New York State Fire Instructors Conference. He expects to continue teaching a high school equivalency course and several fire department promotional subjects at Delehanty Institute, and will be available for consultant services. □□

JUVENILE FIRE SETTING

Continued from page 543

light up scraps of paper to "burn up" mother or to burn a picture of a man, "pretending" it was dad who just warmed his back side, this child secludes himself in a bedroom and starts a "little" fire under the baby's crib or the parents' bed, and in his mood of fantasy, pretends to eliminate those factors that make his life unhappy.

In reality, he would never openly undertake to do harm to the new baby nor his parents, but in his own secluded way, he can destroy with fire these undesirable mental oppressions. Generally, he knows the danger of fire and plans to put out his "little blaze," but disaster many times wins out. When these same children feel they are unwanted or helpless in life due to physical affliction, they will ofttimes start a fire under their own beds. The child in this category is in the six-to-eight-year-old group.

The child also resorts to purposeful fire-setting to seek revenge. Fires set in schools and churches, to revenge another student, a teacher or a clergyman for some well-meant correction unfortunately have cost lives. The type of catastrophe that this practice creates furnishes heart-rending news copy on a national basis. It is interesting to note that in a study of 238 juvenile fire-setters, 56 had such motive-type fires in homes and schools. A local church recently fell prey to this motivation while over a thousand people were attending services.

Modern dynamic psychology has taught that there is a great symbolism in fire. It is an excellent means of destruction and is admirably suited for carrying out aggressive tendencies; for venting hatred; and a perfect medium for discharging a considerable amount of suppressed emotion. Fire is a magical power whose exercise gives considerable satisfaction.

While destruction may be the main motive, this chosen medium may bring more satisfaction to the fire-setter than the resulting destruction. By the use of a match, the fire-setter achieves spectacular effects which are greater than the usual proportion between effort and results. This impulsion is a disorder of children and is socially unacceptable. With children, curiosity and impulse are mixed with aggression. It is not always a direct expression of sexual or aggressive drive, but can be related to a family situation. Fire-setting may have a motive or a series of motives, but generally there is a wide gap between the *depth* of the reason and the *effect* of the act. Revenge motives are petty and trivial from a rational standpoint. Unhappi-

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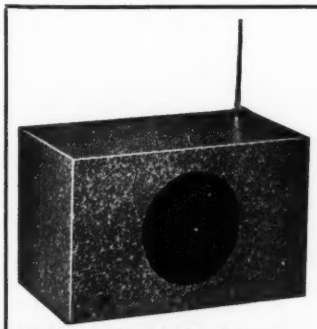

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ness in love, humiliation in love, revenge against a faithless lover, or the attempt to inflict shame upon a person are among some of the revenge motivations that inspire juvenile fire-setting.

Fire and law enforcement agencies during the past 10 years have added great science and know-how in the area of fire and arson investigation. As a result of these efforts, arson is more effectively and precisely proved. Those in the respective fields must now go into this subject of juvenile arson from all angles and begin to understand the reasons for it—how to determine it and how to intelligently deal with it. The fireman, the man who first comes upon this act of destruction, must attempt to understand the problem of the fire-setter.

Apart from the juvenile fire-setter who commits his act for profit, investigation has brought out reasons for this act. The psychotic and mental defectives deliberately set fires to: React against a social order that they feel is against their interests; wreak revenge upon another—a rival, an employer, a parent or teacher; retaliate for injured vanity; react in jealous rage behavior; provide opportunity to perform heroic endeavors; create impression of power and might within a social group; react to perverted sexual pleasure in converting a sex impulse into substitute excitement.

The psychologist also has his list of classifications with respect to the severely affected child or adolescent. He may set fires and be in the following groups: *The accidental group*—the temporarily confused or delirious one who does not know the nature of his acts. The imbecile with lack of judgment who sets fires at any place upon impulse; *the delusion group*—who set fires because they are acting on some "authority" from either above or below; *the erotic group*—this group would embrace a large variety of the sex perversions that take this expression as a fulfillment of the sex impulse; and *the revenge group.*

In complete contrast to the child with the abnormal behavior pattern and the mental defective, we have the juvenile fire-setter who is perfectly normal in behavior. This group would include the youngster who is just curious about fire and how it works; or the child who lights a match for illumination while "exploring" a vacant building. The match drops upon a combustible material and we have another juvenile arson statistic. Although it may be debatable, this child has no expression of malice, no behavior abnormalcy nor any sinister motive to activate his fire-setting.

Pyromania was first described as an

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expression most frequently seen in puberty and associated with the development of sexual experience. This is apparently true since the greatest incidence of pathological fire-setting is between the 13th and 18th year, the age of sexual development. The original view that pyromania should find its greatest expression in the female, due to the dramatic changes in her endocrine system, does not hold true. In our present culture, pyromania seems to indicate the masculine struggle to attain prestige and power. The magic of fire and its destructiveness makes an ideal medium to enhance the fire-setter's feeling of power and importance within his group; however, this same bit of masculinity seems to point out definite defects in intelligence factors. Along with their search for power, they enjoy the sight of the fire, the racing fire engine and the confusion caused by their act. The juveniles of this characteristic are generally repeaters at fire-setting. It is interesting to note some of the reasons that the investigators and the psychologists give that promote arson in this solitary fire-setter: As a result of guilt complex relative to bed-wetting and self-sexual expressions; covering up other minor guilt manifestations; desire to retaliate against hostility shown them; desire to become a "big shot"; as a result of some physical handicap; desire for some sexual excitement; as a result of being a lonely child who wants to earn a place in society; wanting to cover up another crime, big or little.

There are fire-setters primarily motivated by vanity. There is the late-adolescent who is physically a little man with grandiose social ambition. His natural equipment dooms him to insignificance. No activity is too bizarre if it brings him attention; he is like the small child that dreams that he will be superman. This type of subject is generally an exhibitionist, along with being a pathological liar, to elevate his own ego and thus raise his prestige within his social group. This youth is well respected by friends and acquaintances or by an employer. The other side of the personality irresistibly wants to set fires and then extinguish them, thus being the hero of the situation. This person will even want the press to write up the fire situation and make him the hero of the occasion. He has thus made himself "big" in the eyes of the community.

This type of fire-setter swings over into a young adult classification and it is interesting to note that studies show that a large percentage of this group have had a history of a head injury. It was also noted that they married at

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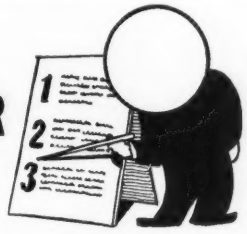

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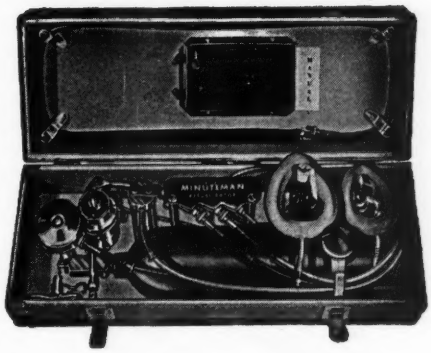

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an early age, yet less than one-third of those apprehended for fire-setting, were at that time living with their wives. The relation of this fact to sexual adjustment bears comment and stimulates conjecture. Statistics indicate that this group comes from the more urban communities and to a great degree responds to psychiatric treatment within one year.

Pyromania is a psychological state. The felony of arson is a surface expression of a profound mental disturbance and must be recognized by the fire chief, the investigator and the court. The surface symptom attracts more attention because it appears as a crime and a threat to life and property and thus, protective means must be taken against it by society. Undoubtedly, arson for fraud has inspired many of our present-day arson laws; however, from a scientific standpoint, many of these personality disturbances that are behind arson have been determined and they reveal new significance as to their cause. For instance, work done at the Judge Baker Foundation in Boston on problem children indicates that where there are abnormal mental processes, the fire-setting delinquent can be cured. Similar findings are brought out in studies made at the Worcester Youth Guidance Center in Worcester, Mass. There is a smaller percentage of this peculiar personality problem that is not subject to successful therapy and must be turned over to agencies of justice for disposition.

The day may eventually come when society will have relief from the abnormal habitual fire-setter. Laws for arson may have to undergo a change to deal more harshly with the arsonist who commits his act for fraud or personal gain, at the expense of others, and the juvenile arsonist, who as a result of his correctable behavior pattern and his society, sets a fire. It is hoped that the reasons behind the juvenile arsonist's behavior will be more clearly understood and studied by the fireman, the investigator, the psychologist and the courts. □□

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Rosenoff, "Manual of Psychiatry," 1938
Lewis and Yarnell, "Pathological Fire-Setting," 1951
Schmideberg, "Pathological Fire-Setter," J. of Law and Criminology, 1953
Chief Investigator James Belknap, "Pittsburgh Bureau of Fire 1959 Report"
Minutes of the IAFC, 1960 Meeting in Rochester, New York

Acknowledgement is also expressed to the doctors of psychology who severally gave of their time for interview and discussion on this problem. Many times great knowledge was forthcoming from these meetings; at other times the writer was totally confused on the problem and the solution of same.

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OBITUARIES

D. L. Harrington

David L. Harrington, 66, chairman of the executive and management policy committees of the Reuben H. Donnelley Corporation, publishers of FIRE ENGINEERING, died on June 2.

His career from an Iowa farm boy through the ranks of the Donnelley Corporation to president, 1951 to 1957, and chairman of the board and chief executive officer, 1957 to January 1961, was paralleled by his active participation and leadership in numerous business, civic and welfare organizations.

Mr. Harrington was president of the Illinois Chamber of Commerce in 1958-59. In the latter year he became the first president of the Business Mail Foundation. Also in 1959 he served as chairman of the National Cancer Crusade and was elected a director of the American Cancer Society.

He was a member of the executive committee of the National Civil Service League, president of the Chicago Athletic Association, member of the Executive Club, member of the board of the Cook County Tuberculosis Sanitarium, member of the board of Junior Achievement of Chicago and active in the work of the Chicago Community Fund.

During his years as president and chairman of the Donnelley Corporation, he was a vital influence on the growth and development of its magazine publishing division, of which this publication is a part, from a nucleus of three business papers to 22 highly specialized magazines serving a wide variety of industrial and professional fields. He is survived by his widow, Mrs. Blanche Harrington; a son, Edward; and three grandchildren.

Chief Louis Almgren

Louis Almgren, 85, chief of the San Diego, Calif., Fire Department from 1909 to 1935, died May 14 following an operation. He joined the department in 1902. While chief, he obtained the first gasoline-powered fireboat in the United States, the "Bill Kettner," still in service

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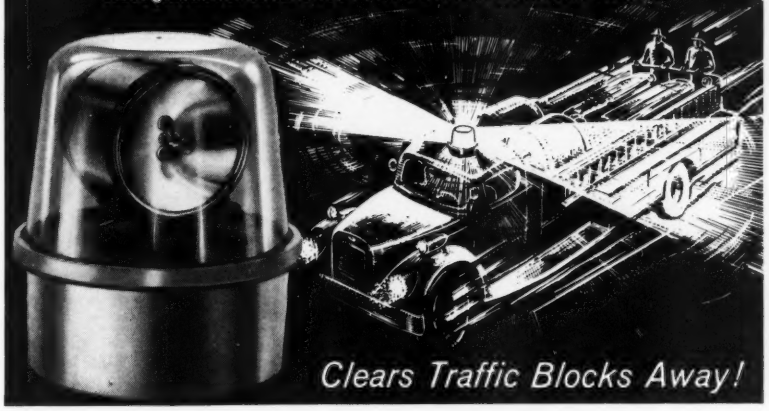

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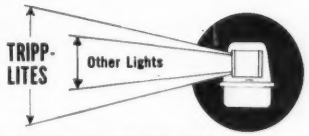

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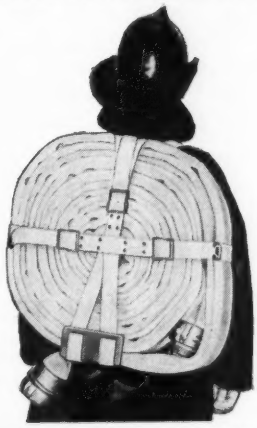

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after conversion to diesel and soon to be replaced.

He was the first president of the San Diego Veteran Firemen and Policemen's Association and was formerly on the executive committee of the Pacific Coast Firemen's Association. He was also a member of the International Association of Fire Chiefs, the Pacific Coast Inter-Mountain Association of Fire Chiefs and the California State Fire Chiefs Association. Up to the day of his death he maintained a keen interest in the fire department. He was particularly active in combatting efforts by members of the city government to merge fire and police services.

Roi B. Woolley

Lieut. Robert Kennedy

Lieutenant Robert J. Kennedy, 52, official photographer and accident investigator of the Philadelphia Fire Department collapsed and died at his home on May 17. He was recuperating from a surgical operation necessitated by a hernia suffered at the recent 2nd and Diamond Streets gasoline station explosion while rescuing Lieutenant Charles Gindele from the debris.

Bob, as he was known to a host of friends, joined the fire department in 1938. He later became driver and aide to Deputy Commissioner and Chief of Department, George Hink, then a battalion chief, and became interested in photography when Chief Hink was assigned to accident investigations. He

was named official photographer in 1951 and promoted to lieutenant in 1953. In 1957, he was named "Fireman of the Year" by the Box 1776 Association and elected an associate member of the National Press Photographers Association.

He took more than 50,000 fire photographs during his career and held the distinction of having more cover photographs on FIRE ENGINEERING than any other photographer. His epic "Cheating Death" showing a fireman racing from under a falling wall has been widely circulated and won the 1956 National Press Photographers-Encyclopedia Britannica

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spot news award over 4,000 entries as well as the 13th Annual University of Missouri Photo Competition.

He is survived by his wife, Blanche.

William Jerome Daly

William J. (Jerry) Daly, 73, well-known New York City fire buff and contributor to FIRE ENGINEERING, died May 27 at Fitch Private Hospital of a heart ailment. He began his career in 1910 as a news reporter for the *North Side News* in the Bronx and wrote a column "Fire Crackers" for the *Chief*, a weekly civil service newspaper. He later moved to the old *Evening World* and in 1924 he

was named assistant secretary, Board of Transportation. Nine years later he was named secretary. In 1953 the Transit Authority replaced the board and he held the same position for it until February 1, 1958, when he retired.

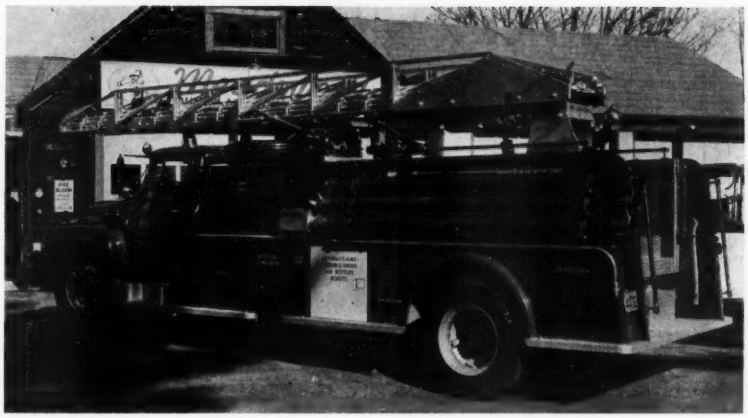
During World War I he was chief of the auxiliary fire corps in the Bronx, and in World War II he was an auxiliary fire alarm dispatcher in the Manhattan Central Office. In 1956 he was awarded a Certificate of Merit by Fire Commissioner Edward F. Cavanagh, Jr., for his interest in the New York Fire Department. He continued his column in the *Chief* until 1960. □□

Volunteers Resign In Mass Protest

Volunteer firemen of the Montgomery Local Fire District, San Diego County, Calif., resigned en masse March 12 in protest over the dismissal of a member of the paid force. The district department provides protection for Harborside, Otay and Castle Park, small communities in the area. A spokesman for the group said 17 volunteers, following a meeting in a private home, went to the department's Castle Park headquarters, picked up their uniforms and gear and submitted oral resignations.

The action followed by 24 hours the resignations of the paid chief, Don Wiltsy, and his assistant, Art Smoak. It left the department with six paid men. The fire commissioners appointed Lieutenant Melvin J. Richards as fire chief and set about recruiting more volunteers.

Roi B. Woolley



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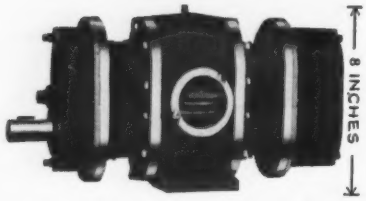

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Fire colleges

Arizona State Fire Training School—Oct. 19-21, Phoenix College, Phoenix. Sponsored jointly by State Department of Vocational Education, Phoenix College, Phoenix Fire Department and the Arizona Firemen's Association. For information write Assistant Chief Jake Siken, Director, c/o Phoenix Fire Department, 49 South 1st Street, Phoenix 4, Ariz.

British Columbia Fire College—Aug. 22-25, Penticton, B. C. Fire College sponsored by the British Columbia Fire Chiefs' Association.

California Fire Training Program—June 12-16—**Arson and Fire Investigation Seminar,** to be held in cooperation with California Conference of Arson Investigators and Extension Division, University of California, at Los Angeles; July 17-21, **Fire Prevention Seminar,** to be held in cooperation with the Fire Prevention Inspectors' Section, California Fire Chiefs' Association and Extension Division, University of California, at Berkeley. For information, write Thomas S. Ward, Supervisor of Fire Training, California State Department of Education, Bureau of Industrial Education, 721 Capitol Avenue, Sacramento 14.

Florida State Fire College—June 19-23, **Fire Pump Maintenance (Seagrave).** June 26-30, **Fire Pump Maintenance (Hale).** July 17-21, **Fire Alarm and Communication Systems.** Aug. 7-11, **Seminar in Arson Investigation and Detection,** to be held at Cherry Plaza Hotel, Orlando. Sept. 4-8, **Units 101,** Tools, Forcible Entry, Breathing Apparatus, Extinguishers; **107,** Arson Detection; **201,** Instructor Training. Sept. 11-15, **Units 102,** Hose and Ladders; **109,** Rescue; **202,** Company Officer Training. Sept. 18-22, **Units 108,** Ventilation, Salvage and Overhaul; **109,** Rescue; **204,** Fire Fighting Tactics. Sept. 25-29, **Units 105,** Fire Apparatus and Pumps; **106,** Fire Inspection; **208A,** Fire Department Administration. Oct. 2-6, **Units 104,** Fire Streams; **105,** Fire Apparatus and Pumps; **206,** Fire Prevention and Fire Protection; **208B,** Fire Department Administration. All courses but the Arson Investigation Seminar will be held at the Fire College in Ocala. For information write W. H. Barnett, Superintendent, P. O. Box 785, Ocala.

Illinois Fire College—June 12-15, University of Illinois, Urbana. For information, contact Professor R. K. Newton, Supervisor of Engineering Extension, Director, or J. I. Fetters, Head of Firemanship Instruction, Division of University Extension, University of Illinois, General Chairman.

Indiana Fire Service Training Program—Sept. 13-16, **Indiana State Fire School;** Oct. 30-Nov. 3, **Fire Inspectors Course.** All courses to be held at Purdue University, Lafayette, Ind. For information write, Professor Shelby Gallien, Director, Public Safety Institute, Division of Adult Education, Purdue University, Lafayette, Ind.

Maryland Fire Training Program—Pump School Barton-American, June 10-11; July 10-12, Hydraulics Short Course; Aug. 7-9, Aerial Ladder Short Course; Sept. 5-8, 28th Annual Short Course for Firemen. All courses will be held at the University of Maryland. For information, write Robert C. Byrus, Director, Fire Service Extension, College of Engineering, Glenn L. Martin Institute of Technology, University of Maryland, College Park.

Michigan Fire Inspectors Conference—Sept. 12-15. Twelfth Annual Meeting will be held at the Michigan State University Kellogg Center, East Lansing, Mich. Contact, Fire Inspector John Bunk, Secretary, Michigan Fire Inspctors Society, 33110 Five Mile Road, Livonia, Mich.

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Michigan Fire Training Program—June 20-23, **Annual Fire College;** July 17-21, Sept. 18-22, Oct. 16-20, **Basic Firemanship Training;** July 24-28, Sept. 25-29, **Fire Department Officer Training.** All courses to be held at the Civil Defense and Disaster Training Center, University of Michigan. For further information, write, Francis Hartman, Supervisor, Firemanship Training Program, The Civil Defense and Disaster Training Center, University of Michigan, North Campus, Ann Arbor, Mich.

Mississippi State Fire College—June 26-30, Jackson, Miss. For information write, Gibbs Parrish, Yazoo City.

Morris County Fire School—July 11, Rainbow Lakes Fire Headquarters, Parsippiny-Troy Township; Aug. 1—Burham Park, Morris Township Fire Department; Sept. 5, Burham Park, Morris Township Fire Department. For information, write Robert H. Wright, Publicity Chairman, Long Hill Lane, Chatham, N. J.

Navy Structural Fire Fighting School—Aug. 21-24, Norfolk, Va. A course in "Fire Protection Problems in the Atomic Age" will be given by F. L. Brannigan. Places are available in this course for fire department officers, fire marshals or fire insurance personnel. Contact F. L. Brannigan, Safety and Fire Protection Branch, U. S. Atomic Energy Commission, Washington 25, D. C.

New Hampshire Fire School—Aug. 26-27, Training Center of the Meadowood County Area Fire Department. For information write Chief Donald Holbrook, Meadowood County Area Fire Department, Fitzwilliam.

New Mexico State Fire Marshal's Fire Protection Conference—Aug. 14-16, New Mexico State University, Las Cruces, N. M. For information contact John B. Woodall, Deputy State Fire Marshal, Post Office Drawer 311, Santa Fe.

North Carolina Pump School — Oct. 16-18, Charlotte, N. C. For information, write Chief Charles L. Burkett, Fire Department Headquarters, Salisbury, N. C.

Ohio State Fire School—Sept. 11-15, Ohio State University, Columbus. For information write Trade & Industrial Education Services, 1885 Neil Avenue, 118 Townshend Hall, The Ohio State University, Columbus 10.

Ontario Fire Training Program—June 19-30, Advanced Fire Inspection Practices Course, Part II; July 10-21, Pump Course; July 24-Aug. 4, Company Officers' Course, Part I; Aug. 14-18, Fire Department Instructors' Course, Part I; Aug. 21-Sept. 1, Fire Department Instructors' Course, Part II; Sept. 11-15, Radiological Monitoring Course; Sept. 18-22, Volunteer Fire Officers' Course, Part I; Sept. 25-Oct. 6, Pump Course; Oct. 16-20, Basic Fire Inspection Practices Course; Oct. 23-27, Mutual Fire Aid Forum. All of the above courses will be held at the Ontario Fire College, Gravenhurst, Ont. Regional fire schools will be held June 26-30 in Cornwall for Counties of Stormont, Dundas & Glengarry; Oct. 16-20 in Essex for the County of Essex; and Oct. 23-27 in Chatham for the County of Kent. For information, write M. S. Hurst, Ontario Fire Marshal, 204 Richmond Street West, Toronto 1.

Pennsylvania State Firemen's Training School—June 26-30, July 24-28, Sept. 11-15, Oct. 30-Nov. 1, **Basic Fire Fighting.** July 17-21, Aug. 21-25, Sept. 18-22, **Ladders, Rescue, Salvage.** July 10-14, Aug. 28-Sept. 1, Sept. 25-29, Nov. 13-17, **Advanced Fire Fighting.** Aug. 14-18, Oct. 16-20, **Fire Department Pumps (Basic).** June 12-16, Aug. 14-18, Oct. 23-27, **Fire Department Pumps (Advanced).** June 10, Aug. 26, Nov. 25, **Week-End Special.** Aug. 14-18, **State Fire School.** Aug. 21-23, **D2 Finisher Course.** All sessions will be held at Training School in Lewistown. For information, write Art Espey, Director, P. O. Box 631, Lewistown.

South Carolina Fire Fighter Training Service—Regional schools to be held as follows: June 12-16, Union; June 26-30, Loris; July 10-14, Pickens; Sept. 4-8, West Columbia;

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Sept. 11-15, Cayce. For information, write H. B. Wells, Instructor, Route 1, Box 119, Prosperity, S. C.

Southern Wisconsin & Northern Illinois Fire School—September 10, Green County Fair Grounds, Monroe, Wis. For information, write Herman Pfund, New Glarus, Wis.

Southside Virginia Fire School—Aug. 21-23, South Boston, Va. Enrollment will be limited. For information, write L. W. Osborne or W. R. Roland, P. O. Box 385, South Boston, Va.

Southwestern Arson Investigation Institute—Oct. 17-21, Extension Study Center, North Campus, The University of Oklahoma, Norman. For information write James Robinson, Coordinator and Legal Consultant, Southwest Center for Law Enforcement Education, Extension Department of School and Community Services, The University of Oklahoma.

Staunton Virginia State Approved Fire School—July 24-28, Staunton, Va. For information, write R. Lawrence Oliver, State Department of Education, Box 654, Harrisonburg, Va.

Tennessee State Fire Service Training School—Aug. 21-25, Fire Training Center, located on the campus of Middle Tennessee State College, Box 880, Murfreesboro, Tenn. For information write Homer S. Elkins, Director, c/o District Office, Trade and Industrial Education, Division of Vocation, Department of Education, 215 Chestnut Street, Chattanooga 3, Tenn.

Texas Firemen's Training School—July 23-28, Texas A. & M. College Campus, College Station. The following courses will be included: Basic and Advanced Fire Fighting; Firemen Instructor Training; Fire Department Officer Training; Industrial Fire Protection; Armed Services Fire Protection; Fire Department Pump Maintenance; Fire Department Pump Operations; and Fire Marshals' Course (Basic, Advanced and Special). For information write Henry D. Smith, Chief, Firemen's Training, Texas Engineering Extension Service, College Station.

Tri-State Fire School—Aug. 21-25. For information write Captain R. M. Myers, 816-9th Street, Huntington, W. Va.

Western Pennsylvania Firemen's Training Institute—Aug. 28-Sept. 1, State College, California, Pa. For further information, write James Silbaugh, Secretary, Fire School Committee, Uniontown, Pa. □□

The round table...

Discussion of current fire department and fire management problems

Problems of Off-Time Employment

THIS IS THE FOURTH installment of the Round Table on problems of off-time employment.

Readers are invited to participate in the discussion which will continue in the August issue. Address replies to Round Table Editor, FIRE ENGINEERING, 466 Lexington Avenue, New York 17, N. Y.

The Discussion

H. E. Simpson, Chief, Portland, Ore.: Although the regulations of the Portland Fire Bureau do not strictly forbid members from engaging in all outside employment, they do set up restrictions against certain types of employment. Our regulations state: "Members shall devote their time and effort to the welfare of the bureau. They shall not be employed in, or connected with any business or occupation which will in any way impair their health or their proficiency, or otherwise bring adverse criticism upon the Bureau of Fire." We also name certain trades that we forbid our men to work at, as our experience has shown them to be in conflict with the regulation stated above.

I believe our present regulations are moderate and yet have sufficient controls to prevent conflict with the public interest. It is, I feel, a reasonable compromise between a rigid forbidding of outside employment and one of unrestricted employment.

Our fire fighters accumulate sick leave to a maximum of 126 days. This time may be used without prejudice for illness or off-duty injuries, even though such injuries come as a result of off-duty employment. After a fireman's accumulated sick time has expired, he has certain benefits available to him under our Fire and Police Disability and Retirement System. He receives such off-duty pension benefits also without prejudice, even though his injury may occur on another job. However, he is denied these pension benefits in case of " . . . willful injuries, injuries sustained while willfully doing an unlawful act and weakness or illness resulting directly or indirectly from immoral practices."

Whether or not legal action against a fireman for outside work activities would jeopardize his position with the department would depend somewhat on who initiates the legal action. If the city government takes action, certainly his fire department job is jeopardized, although he has certain rights of appeal to the Municipal Civil Service Board to protect his job. If legal action from outside the city government is initiated, his fire department job may or may not be jeopardized, but certainly not merely because of the fact that such action was initiated. I believe the degree of jeopardy would depend on the circumstances and severity of the case and also the final outcome or court decision in the particular case.

I do not believe better department salaries and hours would eliminate multiple job holding, but I do feel that it would substantially decrease such multiple job holding by firemen.

In Portland when a conflict arises between a unionized craft or trade and a fireman regarding his off-duty employment, the problem is usually resolved between the affected craft union and the Portland local of the International Association of Fire Fighters which represents better than 99 per cent of our uniformed personnel.

C. L. Cox, Durham, N. C.: Our city government has never set a policy which would forbid firemen to perform other work on their time off from the fire department. This has been discussed several times by the governing body, and in each instance the same discussion concerned employees of other departments too.

Up to now, we have not had any problems arising from the fact that men perform other work which in any way was detrimental to their jobs as firemen.

Our retirement system has a provision which states that any city employee, having 10 years of service, who becomes disabled from any cause whether on duty or off duty is entitled to disability retirement. If by chance, a man should be forced to retire on disability with only 10 years of service, naturally his retirement income would be much less than if he should serve out his required time.

The only legal action against a fireman for outside work activities which might jeopardize his position with the fire de-

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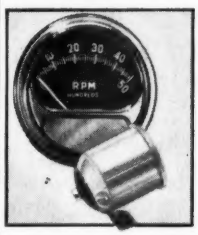

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partment might result from a situation such as the following: If a fireman were a licensed electrician or a licensed plumber and did not perform the work required by city and state codes, this type of thing might cause undue embarrassment to both himself and the fire department.

The high cost of living and the need to have a reasonable amount of the lesser luxuries of life, in my opinion, have been the main reasons for firemen working at jobs other than the fire department. Since the beginning of World War II, most of the firemen in this department have more or less regularly performed other types of work.

Some of the men do outside work for several weeks with a lapse of time in which they do nothing; some of them have continued to work regularly every day off duty from the fire department. From my observation of the men in this department, it is my opinion that most of the best firemen we have are men who do other work than their main job as firemen. Our schedule is a 72-hour week with tours of duty 24 hours on and 24 hours off. This schedule allows ample time for a man to become rested during the night of his off-duty period if he has worked during the day on an off-duty job.

John H. Hohmann, Chief, Bay City, Mich.: Our fire department regulations do not forbid members from taking outside employment. However, his pension or other benefits may be impaired if he is injured while in such employment. It is my belief that better conditions in regard to salary and working hours would eliminate multiple job holding by firemen.

Dan T. Vogel, Chief, Cincinnati, Ohio: Civil service rules permit all city employees to make application to their division head for permission to engage in outside work. Division heads may set up regulations to prevent working in jobs that would present conflict of interest or be prejudicial to the performance of duty and maintenance of high moral standards. Division heads cannot set up regulations to prevent employment in reasonable outside jobs.

There are several reasons why I believe outside work is detrimental to the fire service. The most important is its adverse effect on public relations and good will towards the fire fighter. In Cincinnati, a change can only take place by an act of council. This may take place with increasing unemployment and stronger public resentment.

Our members are informed that all city benefits are forfeited when injured or killed in outside work.

Legal action would only jeopardize a fire fighter's position with the department if it involved a violation of fire division rules, in which case there would be disciplinary action.

I do not believe better department conditions would eliminate multiple job holding by firemen for two reasons: (1) It would be unrealistic to think that the city could increase salaries to equal the income from most outside jobs; (2) there will always be those who will look for

more, regardless of the benefits of the fire division job. The only real deterrent will be the fear of losing their fire jobs when outside employment is made illegal.

M. H. Sutton, Chief, Washington, D. C.: Our department regulations permit members to engage in outside employment. I do believe such work should be forbidden if it interferes with the job of fire fighting.

Pension and other benefits would be impaired should a fireman be injured while engaged in an outside job. Legal action against a fireman for outside work activities might jeopardize his position with the department, especially if the work is illegal.

I believe that better department conditions insofar as salary and working hours are concerned will eliminate multiple job holding by firemen.

John Krusenklaus, Chief, Louisville, Ky.: Our department regulations permit fire fighters to engage in outside employment. They must submit an application to the fire chief. All applications are screened by a union committee.

There are a number of conditions to which a member must agree if his application is approved. They are:

1. He must waive his pension rights from the Louisville Firemen's Pension Fund during the hours of employment.
2. The employment must not require his absence from the metropolitan area of the city.
3. Employment must not result in unfair competition with regular employees of any company or employer for which part-time work is undertaken (i.e. members of the department shall not work for a lesser equivalent wage rate than that paid regular employees).
4. No work shall be undertaken on individual contract unless such contract can be completely performed by the individual alone, and in no event shall any member of the department undertake a contract which is to be performed by the employment of other employees either from the department or from outside the department.
5. This employment must not be allowed to cause undue fatigue or infringe upon the duties as a firemen in any way. Any work shall be confined principally to daylight hours, and in no event shall any work be done between the hours of 12 midnight and 7:20 a.m.
6. The fire fighter must arrange to be on call in case of any emergency.
7. The chief of the division of fire or the director of safety reserves the right to cancel any permission granted hereunder at any time, and upon notification of such cancellation, the fire fighter must immediately cease such off-time employment.
8. This permit, if granted, applies only to the work specified therein and that any other employment undertaken will place the member in violation of fire department regulations and subject to disciplinary action.

I believe that better department conditions in regard to salary and working hours will eliminate multiple job holding by firemen. □□

THE MINUTE THAT WAS FOREVER FOR THE FACE AT THE WINDOW

The ladderman had a brief glimpse of a terror-stricken face at the window. Just as he reached it, the floor collapsed and the face disappeared.

But it wasn't that final minute which decided the fate of the face in the window—it was one of the seven minutes it took to pull the hose off the pumper and get water on the fire.

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Advertisers' index

FIRE ENGINEERING

JULY, 1961

	Page
Akron Brass Mfg. Co., Inc.	Back Cover
Alb Rubber Co.	570
Aluminum Ladder Co.	524
Ansul Chemical Co.	537
Atlas Safety Equipment Co., Inc.	573
Bar-Way Mfg. Co.	566
Bi-Lateral Fire Hose Co.	581
Blackinton & Co., Inc., V. H.	563
Body-Guard Mfg. Co.	574
Braxmar Co., Inc., C. G.	570
Bullard Co., F. B.	Inside Front Cover
Burgess Battery Co.	572
Cairns & Bro., Inc.	575
Circul-Air Corp.	Inside Back Cover
Darley & Co., W. S.	562
Delehanty Correspondence School	572
DuPont de Nemours & Co., Inc., E. I.	526
Eureka Fire Hose Div., U. S. Rubber Co.	517
Federal Sign & Signal Corp.	515
Fire Equipment Dealers	578
FWD Corp.	527
GMC Truck & Coach—A General Motors Div.	534
Gamewell Co.	538
Gerstenslager Co.	520
Goodrich Industrial Products Co., B. F.	519
Grinnell Co.	530
Hahn Motors, Inc.	571
Hale Fire Pump Co.	567
Halprin Supply Co.	574
Handford Brown Co., Inc.	568
Hess & Eisenhardt Co.	518
Hobby Enterprises, Inc., Electronic Div.	569
Janesville Apparel Co.	573
Leonard Pump Div., Electro Switch Corp.	576
McIntire Brass Works, Inc., F. N.	574
Mack Fire Apparatus	522–523
Midwestern Safety Mfg. Co.	528
Mine Safety Appliances Co.	529
Morning Pride Mfg. Co.	576
Motorola Communications & Electronics, Inc.	535
Mueller Co.	525
Natale Machine & Tool Co.	560
Oberdorfer Foundries, Inc.	564
Pirsch & Sons Co., Peter	531
Plectron Corp.	576
Powhatan Brass & Iron Works	521
Republic Rubber Div., Lee Rubber & Tire Corp.	565
Rockwood Sprinkler Co.	559; 569
Russell Uniform Co.	574
Scott Aviation Corp.	582
Smith & Co., D. B.	572
Sponco Aerial Ladder Co.	575
Stephenson Corp.	571
Sun Electric Corp.	579
Trippe Manufacturing Co.	573
U-C Lite Mfg. Co.	577
W-B Manufacturing Co.	561
Waterous Company	536
Western Fire Equipment Co.	570

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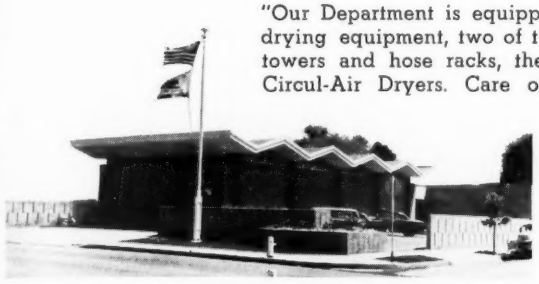

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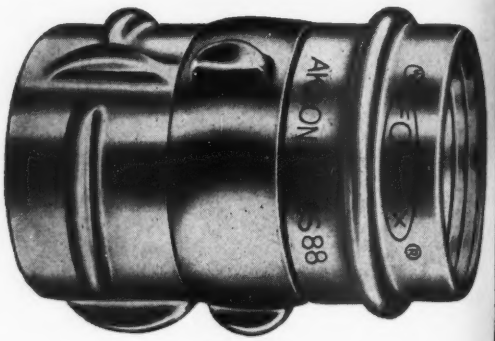

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Brass—reinforced with manganese—drop-forged

Rocker-Ring for added protection to threads and swivel—for added strength in the hose bowls

Tapered hose bowl holds hose in vise-like grip—no slipping at any pressure

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